

Chapter One



Vocabulary

Associative	تجميع
Factors	عوامل
Parentheses	أقواس
Product	حاصل الضرب
Property	خاصية
Justify	يبرر - يعط سبب
Length	طول
Parallel	متوازية
Perimeter	محيط
Width	عرض
Inverse	معكوس
Commutative	الإبدال
Distributive	التوزيع
Addend	الأعداد المجموعة
Bar model	التمثيل بالأعمدة
Fact family	عائلة الحقائق

Repeated addition	جمع متكرر
Perseverance	عزيمة
Review	مراجعة
Estimation	تقدير
Reasonableness	إمكانية
Fact family	عائلة الحقائق
Minute	دقيقة
Quotient	حاصل قسمة
Hear	يسمع
Earned	حصل
Chores	الأعمال المنزلية
Entire	كامل - كله
Vacuuming	كنس
Fee	أجرة
Wage	الأجر
Orchard	بستان
Phrase	العبارة

Content

Bakkar
Self-Check

Bakkar
Exercise
on lessons

Exercise
inspired from
Math Journal

Exercise
inspired from
Discover

Lesson (61 , 62)

Properties of multiplication

Activity 1 Multiplication as repeated addition:

*** Find the product of 4×7 : It read as 4 times 7

♦ Skip count by 7 strategy



Skip 4 times by 7 to get 28

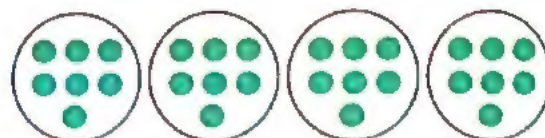
$$7 + 7 + 7 + 7 = \text{Number of skips} \times 7 = 4 \times 7 = 28$$

♦ Groups and dots strategy

4 groups of 7 dots

$$\text{Number of dots} = 7 + 7 + 7 + 7$$

$$= \text{Number of groups} \times 7 = 4 \times 7 = 28$$



♦ Array strategy

4 rows each has 7 elements = number of all elements

$$= 7 + 7 + 7 + 7 = \text{Number of row} \times 7 = 4 \times 7 = 28$$



Activity 2 Notice the difference between:

$$8 + 0 = 8$$

$$8 \times 0 = 0$$

→ Any number $\times 0 = 0$

$$8 + 1 = 9$$

$$8 \times 1 = 8$$

→ Any number $\times 1 = \text{same number}$

Also:

$$17 \times 0 = 0$$

$$138 \times 0 = 0$$

$$9637 \times 0 = 0$$

$$1000 \times 0 = 0$$

$$17 \times 1 = 17$$

$$138 \times 1 = 138$$

$$9637 \times 1 = 9637$$

$$1000 \times 1 = 1000$$

Multiplication facts

Practice 1

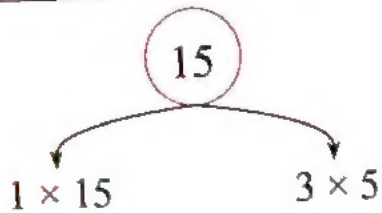
Remember the facts then complete :

Any number $\times 1$ = same numberAny number \times zero = zero

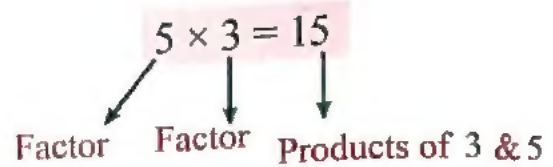
Fact of 1	Fact of 2	Fact of 3	Fact of 4	Fact of 5
$1 \times 2 = \dots$	$2 \times 2 = \dots$	$3 \times 2 = \dots$	$4 \times 2 = \dots$	$5 \times 2 = \dots$
$1 \times 3 = \dots$	$2 \times 3 = \dots$	$3 \times 3 = \dots$	$4 \times 3 = \dots$	$5 \times 3 = \dots$
$1 \times 4 = \dots$	$2 \times 4 = \dots$	$3 \times 4 = \dots$	$4 \times 4 = \dots$	$5 \times 4 = \dots$
$1 \times 5 = \dots$	$2 \times 5 = \dots$	$3 \times 5 = \dots$	$4 \times 5 = \dots$	$5 \times 5 = \dots$
$1 \times 6 = \dots$	$2 \times 6 = \dots$	$3 \times 6 = \dots$	$4 \times 6 = \dots$	$5 \times 6 = \dots$
$1 \times 7 = \dots$	$2 \times 7 = \dots$	$3 \times 7 = \dots$	$4 \times 7 = \dots$	$5 \times 7 = \dots$
$1 \times 8 = \dots$	$2 \times 8 = \dots$	$3 \times 8 = \dots$	$4 \times 8 = \dots$	$5 \times 8 = \dots$
$1 \times 9 = \dots$	$2 \times 9 = \dots$	$3 \times 9 = \dots$	$4 \times 9 = \dots$	$5 \times 9 = \dots$
$1 \times 10 = \dots$	$2 \times 10 = \dots$	$3 \times 10 = \dots$	$4 \times 10 = \dots$	$5 \times 10 = \dots$
$1 \times 11 = \dots$	$2 \times 11 = \dots$	$3 \times 11 = \dots$	$4 \times 11 = \dots$	$5 \times 11 = \dots$
$1 \times 12 = \dots$	$2 \times 12 = \dots$	$3 \times 12 = \dots$	$4 \times 12 = \dots$	$5 \times 12 = \dots$

Fact of 6	Fact of 7	Fact of 8	Fact of 9	Fact of 10
$6 \times 2 = \dots$	$7 \times 2 = \dots$	$8 \times 2 = \dots$	$9 \times 2 = \dots$	$10 \times 2 = \dots$
$6 \times 3 = \dots$	$7 \times 3 = \dots$	$8 \times 3 = \dots$	$9 \times 3 = \dots$	$10 \times 3 = \dots$
$6 \times 4 = \dots$	$7 \times 4 = \dots$	$8 \times 4 = \dots$	$9 \times 4 = \dots$	$10 \times 4 = \dots$
$6 \times 5 = \dots$	$7 \times 5 = \dots$	$8 \times 5 = \dots$	$9 \times 5 = \dots$	$10 \times 5 = \dots$
$6 \times 6 = \dots$	$7 \times 6 = \dots$	$8 \times 6 = \dots$	$9 \times 6 = \dots$	$10 \times 6 = \dots$
$6 \times 7 = \dots$	$7 \times 7 = \dots$	$8 \times 7 = \dots$	$9 \times 7 = \dots$	$10 \times 7 = \dots$
$6 \times 8 = \dots$	$7 \times 8 = \dots$	$8 \times 8 = \dots$	$9 \times 8 = \dots$	$10 \times 8 = \dots$
$6 \times 9 = \dots$	$7 \times 9 = \dots$	$8 \times 9 = \dots$	$9 \times 9 = \dots$	$10 \times 9 = \dots$
$6 \times 10 = \dots$	$7 \times 10 = \dots$	$8 \times 10 = \dots$	$9 \times 10 = \dots$	$10 \times 10 = \dots$
$6 \times 11 = \dots$	$7 \times 11 = \dots$	$8 \times 11 = \dots$	$9 \times 11 = \dots$	$10 \times 11 = \dots$
$6 \times 12 = \dots$	$7 \times 12 = \dots$	$8 \times 12 = \dots$	$9 \times 12 = \dots$	$10 \times 12 = \dots$

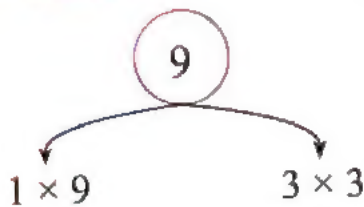
Activity 3 Remember factors of a number :



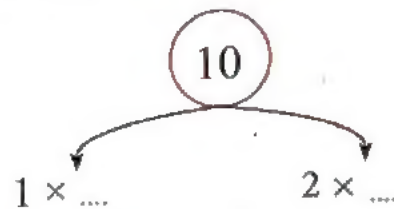
Factors of 15 are : 1 , 3 , 5 , 15



Practice 2 Write the factors of the following :



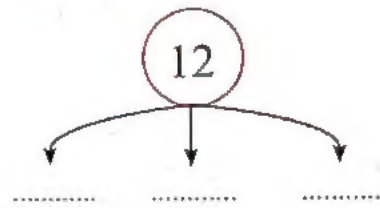
Factors of 9 :



Factors of 10 :



Factors of 22 :



Factors of 12 :

Activity 4 Commutative property :

$$3 + 3 + 3 + 3 = 3 \times 4 = 12$$

$$4 + 4 + 4 = 4 \times 3 = 12$$

• Then $3 \times 4 = 4 \times 3 = 12$

◀ We say that multiplication is a commutative process .

Practice 3 Complete the following :

$$5 \times 4 = \dots \times 5$$

$$7 \times 1 = \dots \times 7$$

$$18 \times 0 = 0 \times \dots$$

$$29 \times 1 = 1 \times \dots$$

$$6 \times 8 = 8 \times \dots$$

$$12 \times 2 = 2 \times \dots$$

Activity 5 Associative property :

There are the factors 5 , 2 , 3 What is needed is: $5 \times 2 \times 3$

With any two factors , we can start ?

Or we must start with the first two factors ?

We can use () to find the product as the following :

$$5 \times 2 \times 3 = (5 \times 2) \times 3 = 10 \times 3 = 30$$

or $5 \times 2 \times 3 = 5 \times (2 \times 3) = 5 \times 6 = 30$

or $5 \times 2 \times 3 = (5 \times 3) \times 2 = 15 \times 2 = 30$

Notice
Start with numbers
in side the brackets

Notice the commutative of 2 and 3

We conclude that Notice : to multiply two number start with any of them this is **associative property** .

Practice 4 Complete :

a $3 \times 4 \times 2 = (\dots \times \dots) \times 2 = \dots \times 2 = \dots$

or $= 3 \times (\dots \times \dots) = 3 \times \dots = \dots$

or $= 4 \times (\dots \times \dots) = 4 \times \dots = \dots$

Notice
Use brackets to show
what we multiply first

b $5 \times 6 \times 10 = (\dots \times \dots) \times 10 = \dots \times 10 = \dots$

or $= 5 \times (\dots \times \dots) = 5 \times \dots = \dots$

or $= 6 \times (\dots \times \dots) = 6 \times \dots = \dots$

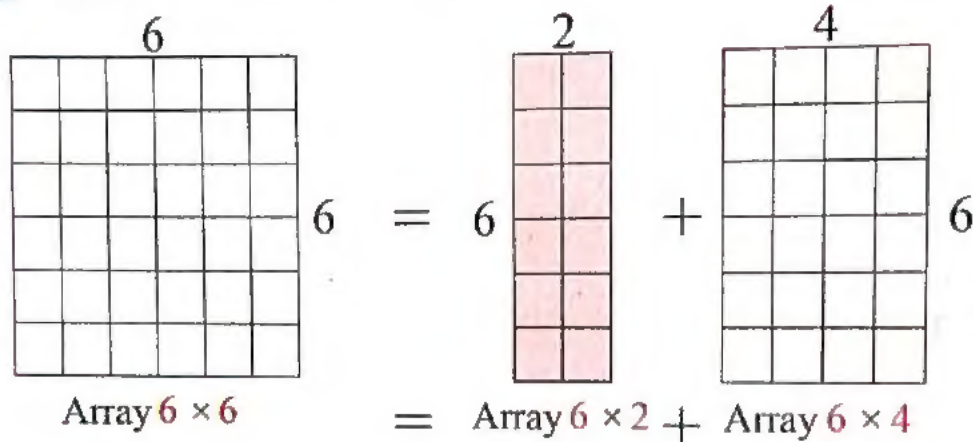
Notice
Use brackets to show
what we multiply first

Activity 6 Distributive property :

We use distributive to find the product of big numbers :

Practice 5 Find the result of $6 \times 6 = \dots\dots\dots ?$

First Array strategy : (As we studied in the first semester)



The conclusion: $6 \times 6 = 6 \times (2 + 4) = (6 \times 2) + (6 \times 4)$
 $= 12 + 24 = 36$

Distribute multiplication over additions

Second Bar model strategy:



$$6 \times 8 = 6 \times (5 + 3) = (6 \times 5) + (6 \times 3)$$

$$= 30 + 18 = 48$$

Another method



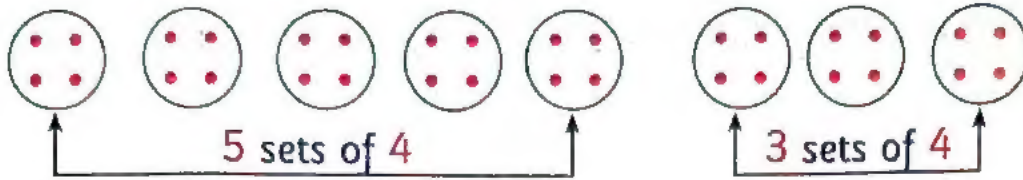
$$6 \times 8 = 6 \times (6 + 2) = (6 \times 6) + (6 \times 2)$$

$$= 36 + 12 = 48$$

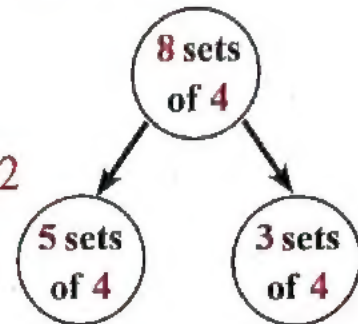
This process help us to breaking apart into smaller chunks

Third Repeating sets strategy:

$$8 \times 4 = \dots \quad 8 \text{ sets of } 4 \text{ dots each}$$



$$\begin{aligned} 8 \times 4 &= (5 + 3) \times 4 = (5 \times 4) + (3 \times 4) \\ &= 20 + 12 = 32 \end{aligned}$$



Practice 6 Complete as the Ex :

Ex $9 \times 5 = (5 + \dots) \times 5 = (5 \times 5) + (\dots \times 5)$
 $= 25 + 20 = 45$

a $12 \times 6 = (7 + \dots) \times 6 = (7 \times 6) + (\dots \times 6)$
 $= \dots + \dots = \dots$

b $13 \times 5 = (8 + \dots) \times 5 = (8 \times 5) + (\dots \times 5)$
 $= \dots + \dots = \dots$

c $3 \times 14 = 3 \times (7 + \dots) = (3 \times 7) + (3 \times \dots)$
 $= \dots + \dots = \dots$

d $5 \times 17 = 5 \times (10 + \dots) = (5 \times 10) + (5 \times \dots)$
 $= \dots + \dots = \dots$

Challenge $8 \times 17 = 8 \times (\dots + \dots) = (\dots \times \dots) + (\dots \times \dots)$
 $= \dots + \dots = \dots$

Self-check on lesson (61, 62)

1 Complete the following :

- a $5 + 5 + 5 = 5 \times \quad =$
- b $6 + 6 + 6 + 6 + 6 = 6 \times \quad =$
- c $7 \times 6 = 7 + \quad + \quad + 7 + \quad + \quad =$
- d $2 \times 9 = 9 + \quad =$
- e $4 + 4 + 4 + 4 + 4 + 4 + 4 = 4 \times \quad =$

2 Complete as in (a) :

- a $2 \times 7 = 7 \times 2$
- b $3 \times \quad = 9 \times \quad$
- c $5 \times \quad = 3 \times \quad$
- d $4 \times \quad = 7 \times \quad$
- e $4 \times \quad = 6 \times 4$
- f $8 \times \quad = 10 \times \quad$
- g $2 \times \quad = 10 \times \quad$
- h $5 \times \quad = 1 \times \quad$
- i $4 \times 0 = 0 \times \quad$
- j $3 \times \quad = 10 \times 3$

3 Complete as in (a) :

- a $5 \times 4 \times 6 = (5 \times 4) \times 6 = 20 \times 6 = 120$
- b $2 \times 3 \times 7 = (\quad \times \quad) \times 7 = \quad \times 7 =$
- c $3 \times 4 \times 3 = (\quad \times \quad) \times 3 = \quad \times 3 =$
- d $2 \times 6 \times 5 = 2 \times (\quad \times \quad) = 2 \times \quad =$
- e $8 \times 1 \times 9 = 8 \times (\quad \times \quad) = 8 \times \quad =$

Notice

We multiply What is in the parentheses first

4 Ring the process with the same problem as (a) :

a $(9 \times 2) \times 5$

$9 \times (2 \times 5)$

11×5

9×10

9×7

b $4 \times (10 \times 3)$

4×13

4×30

14×3

$(4 \times 3) \times 10$

c $3 \times (5 \times 2)$

3×7

8×2

3×10

$(3 \times 5) \times (3 \times 2)$

d $(7 \times 3) \times 1$

3×7

21×1

10×1

11

e $(4 \times 2) \times 8$

$8 \times (2 \times 10)$

$8 \times (2 \times 4)$

6×8

8×8

f $(2 \times 6) \times 3$

8×3

$(6 \times 3) \times (2 \times 3)$

12×3

36

g $(8 \times 5) \times 4$

$8 \times (4 \times 5)$

40×4

20×8

160

Activities from Math Journal

Activity

Use the distributive of multiplication to find the product of each part then find the final product :

a

7×8

The first method

$$\begin{aligned} 7 \times 8 &= 7 \times (5 + \dots) \\ &= (7 \times \dots) + (7 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

The second method

$$\begin{aligned} 7 \times 8 &= 7 \times (7 + \dots) \\ &= (7 \times \dots) + (7 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

b

6×13

The first method

$$\begin{aligned} 6 \times 13 &= 6 \times (10 + \dots) \\ &= (6 \times \dots) + (6 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

The second method

$$\begin{aligned} 6 \times 13 &= 6 \times (5 + \dots) \\ &= (6 \times \dots) + (6 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

c

9×5

The first method

$$\begin{aligned} 9 \times 5 &= 9 \times (2 + \dots) \\ &= (9 \times \dots) + (9 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

The second method

$$\begin{aligned} 9 \times 5 &= 9 \times (4 + \dots) \\ &= (9 \times \dots) + (9 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

d

8×17

The first method

$$\begin{aligned} 8 \times 17 &= 8 \times (10 + \dots) \\ &= (8 \times \dots) + (8 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

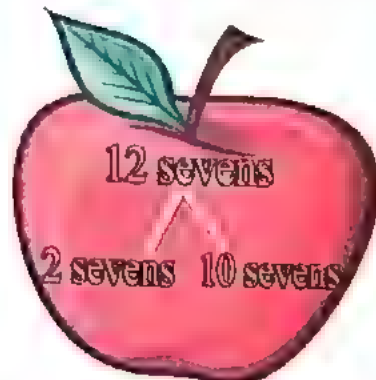
The second method

$$\begin{aligned} 8 \times 17 &= 8 \times (8 + \dots) \\ &= (8 \times \dots) + (8 \times \dots) \\ &= \dots + \dots \\ &= \dots \end{aligned}$$

Lesson (63 , 64 , 65)

Relation between multiplication and division

- Activity 1** Look at the picture below and circle the pail that correctly shows how to solve the problem :



$$(10 \times 3) + (2 \times 3) = 36$$

$$(10 \times 7) + (2 \times 7) = 84$$

$$(12 + 7) + (2 \times 7) = 33$$

- Activity 2** Estimate the following using the heights place value strategy :

Number	Estimations
59	→ 50
64	→ ...
27	→ ...

Number	Estimations
75	→ ...
31	→ ...
18	→ ...

The way

Put zero in the ones digit and keep the tens digits as it is

- Activity 3** Estimate the following numbers (the first digit from the left) as the Ex:

Number	Estimations
684	→ 600
451	→ ...
920	→ ...

Number	Estimations
189	→ ...
375	→ ...
709	→ ...

The way

Put zero in the ones and tens digits and keep the hundreds digit as it is

TIPS

To rounding 2 digit numbers look at the ones place remove it and put 0 then do the following :

- (a) If the ones digits less than 5 keep the tens digit as it is.
 (b) If the ones digits more than or equal 5 add 1 to the tens digit.

Activity 4 Round the following numbers to the nearest 10 by looking at the ones place as in (a, b) :

Number	Rounding
a 26 →	30
b 78	.....
c 97	.....
d 31	.....

Number	Rounding
b 54 →	50
d 39	.....
f 63	.....
h 85	.....

TIPS

To rounding 3 digit numbers remove at the tens and ones place and put 0 in each place then follow the following :

- (a) If the tens digits less than 5 keep the hundred place as it is.
 (b) If the tens digits more than or equal 5 add one to the hundred digit.

Activity 5 Round the following numbers to the nearest 100 as in (a, b) :

Number	Rounding
a 384 →	400
b 780	.....
c 419	.....
d 560	.....

Number	Rounding
b 134 →	100
d 591	.....
f 246	.....
h 950	.....

Fourth Fact strategy :

Activity 6 Estimate the product of $5 \times 9 =$

Know that $5 \times 10 = 50$ So : 5×9 must be less than 50

Know that $5 \times 8 = 40$ So : 5×9 must be more than 40 ...

So the answer is : $5 \times 9 = 45$

Practice 1 Estimate the product :

a $6 \times 7 =$

Know that $6 \times 6 =$ So : 6×7 must be more than

Know that $6 \times 8 =$ So : 6×7 must be less than

So the answer is : $6 \times 7 =$

b $4 \times 3 \times 9 =$

Know that $(4 \times 3) \times 9 = 12 \times$

Know that $12 \times 10 =$ So : 12×9 must be less than

Know that $12 \times 8 =$ So : 12×9 must be more than

So the answer is : $12 \times 9 =$

Practice 2 Dalia had 8 baskets each basket held 6 eggs.
How many eggs did Dalia have in all?

Write the equation you are trying to solve this problem. $8 \times 6 =$

Know that $8 \times 5 =$ So : 8×6 must be more than

Know that $8 \times 7 =$ So : 8×6 must be less than

So the answer is : $8 \times 6 =$



Practice 3 Ahmed bought 11 pens, the price of each pen 9 LE.
How much did he pay?

Write the equation you are trying to solve this problem. $11 \times 9 =$

Know that $10 \times 9 =$ So : 11×9 must be more than ...

Know that $12 \times 9 =$ So : 11×9 must be less than ...

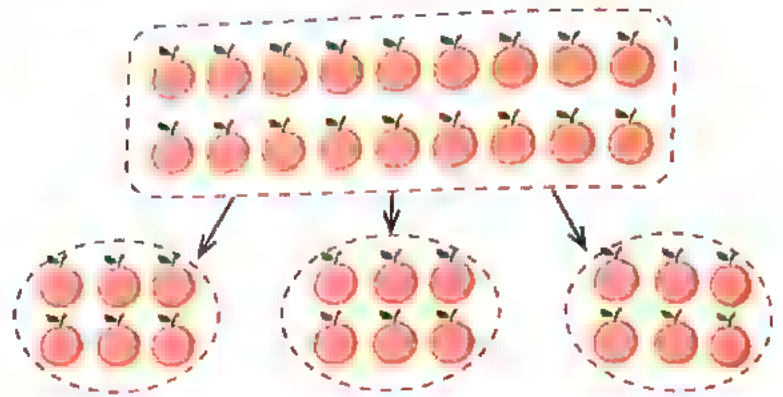
So the answer is : $11 \times 9 =$



Relation between multiplication and division

Activity 7 Use different strategies to find $18 \div 3$:

a Array strategy :

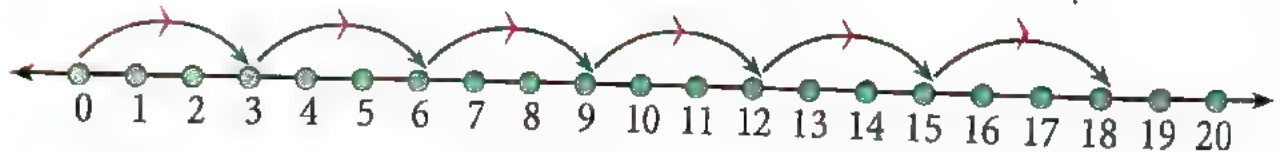


Use 3 groups each has 6 oranges .

We can write this using division sign (\div) as :

The number in each group = $18 \div 3 = 6$ oranges

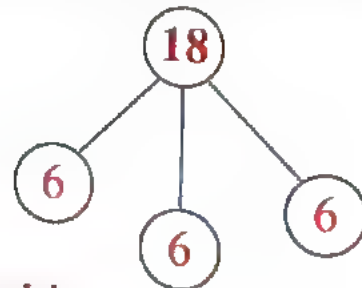
b Skip count by 3 up to 18 :



Number of skips = $(18 \div 3) = 6$

c Using number bond to show the division model for the problem:

$$(18 \div 3) = 6$$



d Inverse operation (**multiplication / division**) :

$$(18 \div 3) = \dots ?$$

The missing factor is 6

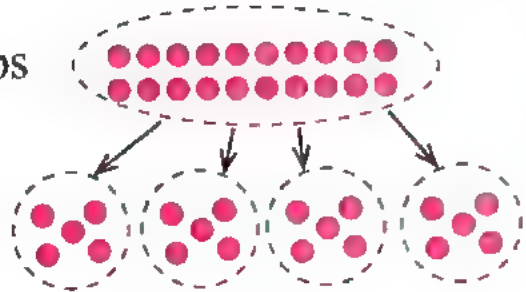
We can show it as : $3 \times \dots = 18$

Practice 4 Use the following strategies to find $20 \div 4$:

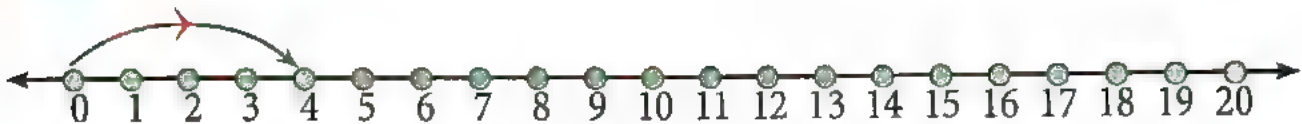
a Array strategy :

Divide the number 20 to 4 groups
each groups contains 5 items

$$(20 \div 4) = \dots\dots$$



b Skip count by 4s to 20 :

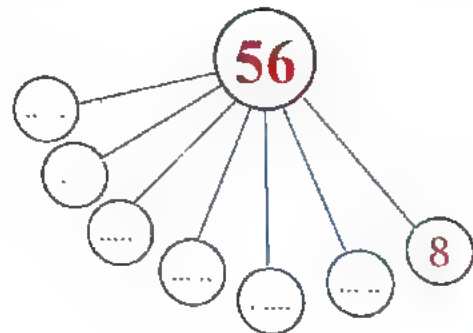


$$(20 \div 4) = \dots\dots = \text{number of skips}$$

Practice 5 Use the following strategy to find $56 \div 7 = \dots\dots$:

a Using part whole model :

$$(56 \div 7) = \dots\dots$$



b Inverse operation :


$(56 \div 7) = \dots\dots ?$ We can show it as : $7 \times \dots\dots = 56$

The missing factor is $\dots\dots$ Then $(56 \div 7) = \dots\dots$

Activities from Math Journal

Activity

Write problems in the row at the bottom and show the work as the example :

Problem	Work space	Answer
$24 \div 2 =$	Mahmoud has 24 sandwich he want to divide it between two families . Find the number of sandwich that each family get ? 	$24 \div 2 = 12$ So $2 \times 12 = 24$
$\times 7 = 56$		
$12 \times = 48$		
$63 \div = 7$		
$4 \times 5 \times 2 =$	... boxes each has boxes and each box contains pens How many pens in all boxes ?	

Self - check on lesson (63 , 64 , 65)

1 Complete the following :

a $5 \times 11 = \dots\dots\dots$

Know that $5 \times 10 = \dots\dots\dots$ so 5×11 must be more than

Know that $5 \times 12 = \dots\dots\dots$ so 5×11 must be less than

Then $5 \times 11 = \dots\dots\dots$

b $4 \times 2 \times 6 = \dots\dots\dots$

Know that $4 \times 2 \times 6 = 8 \times 6$

Know that $8 \times 5 = \dots\dots\dots$ so 8×6 must be more than

Know that $8 \times 7 = \dots\dots\dots$ so 8×6 must be less than

Then $4 \times 2 \times 6 = \dots\dots\dots$

2 Complete the fact family for the following numbers :

4, 5, 20

a $4 \times 5 = 20$

$5 \times \dots\dots\dots = 20$

$20 \div 5 = \dots\dots\dots$

$\dots\dots\dots \div 4 = 5$

6, 8, 48

b $6 \times 8 = 48$

$6 \times \dots\dots\dots = 48$

$48 \div 6 = \dots\dots\dots$

$\dots\dots\dots \div 8 = 6$

2, 7, 14

c $2 \times 7 = 14$

$2 \times \dots\dots\dots = 14$

$14 \div 2 = \dots\dots\dots$

$\dots\dots\dots \div 7 = 2$

3

Fill in the missing numbers then draw lines to connect the equation that are related as the Ex :

EX

$2 \times \underline{9} = 18$

$80 \div \underline{10} = 8$

$7 \times 4 = \underline{28}$

$18 \div 2 = \underline{9}$

$\underline{8} \times 10 = 80$

$\underline{28} \div 4 = 7$

a

$3 \times \underline{\quad} = 6$

$5 \div \underline{\quad} = 1$

$4 \times 9 = \underline{\quad}$

$6 \div 3 = \underline{\quad}$

$\underline{\quad} \times 5 = 5$

$36 \div \underline{\quad} = 9$

b

$5 \times \underline{\quad} = 30$

$21 \div 3 = \underline{\quad}$

$3 \times \underline{\quad} = 21$

$\underline{\quad} \times 6 = 30$

$2 \times 10 = \underline{\quad}$

$20 \div 2 = \underline{\quad}$

c

$6 \times 1 = \underline{\quad}$

$\underline{\quad} \div 5 = 7$

$5 \times 5 = \underline{\quad}$

$6 \div 1 = \underline{\quad}$

$\underline{\quad} \times 7 = 35$

$25 \div \underline{\quad} = 5$

d

$10 \times 3 = \underline{\quad}$

$\underline{\quad} \div 6 = 4$

$6 \times \underline{\quad} = 24$

$30 \div 3 = \underline{\quad}$

$3 \times \underline{\quad} = 9$

$9 \div \underline{\quad} = 3$

Activities from Math Journal

Activity 1

Habiba baked 25 cookies. she wanted to share them equally with her 5 friends.
How many cookies would each friend get?

Solution

Number of biscuit pieces = piece



Activity 2

Farah had 8 bags of marbles inside each bag 6 marbles.
How many marbles did Farah have in all ?

Solution

Number of balls with it = ball



Activity 3

Adel picked 45 apples. He put them equally into baskets. when he was done, he had 9 baskets.
How many apples were in each baskets?

Solution

Number of apples in each basket = apples



Activity 4

Amir had 4 boxes. In each box were 3 dolls,
and each doll had 2 buttons on it's shirt.
How many buttons were there?

Solution




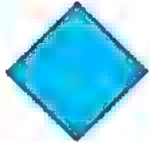

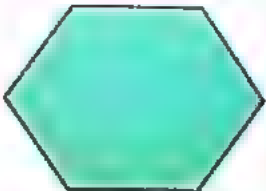
Number of buttons = $4 \times 3 \times 2 = (4 \times 3) \times 2$
= button



Lesson (66)

Apply on perimeter and area

Activity 1 Complete the table show the properties of 2D shapes :

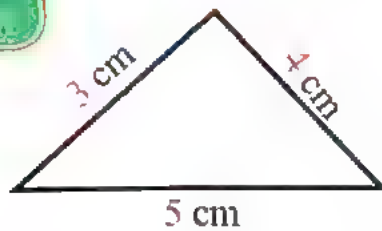
Shapes	Name	Properties			
		Of sides	Number of sides	Properties of vertices	Number of Vertices
	...	Equal in length	..	Equal	.
	....	2 short and 2 long		.....
	.....	2 parallel & 2 not parallel		Not Equal	.
		Equal in length	.....	.....	.....
	..	Each 2 opposite sides are parallel & equal	..	.	
	Regular Hexagon	Equal in length		.	

First : Perimeter

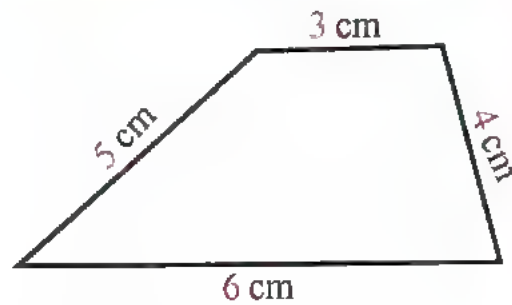
The perimeter of any polygon = the sum of the length of it's sides.

Practice 1

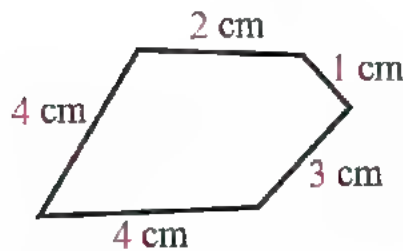
Find the perimeter of the following as the Ex :



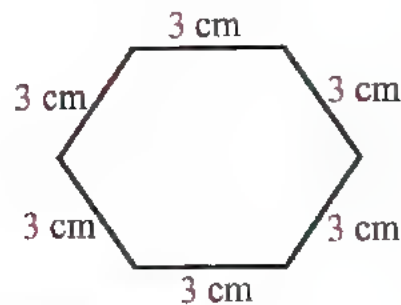
$$\begin{aligned} \text{The perimeter} &= 3 + 4 + 5 \\ &= 12 \text{ cm} \end{aligned}$$



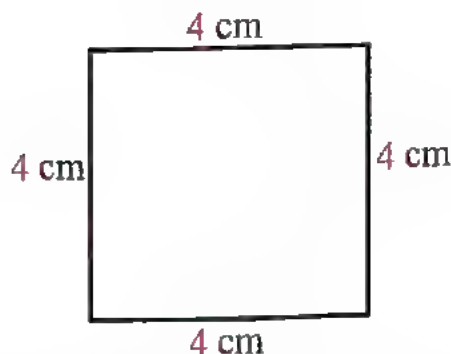
$$\begin{aligned} \text{The perimeter} &= \dots + \dots + \dots + \dots \\ &= \dots \text{ cm} \end{aligned}$$



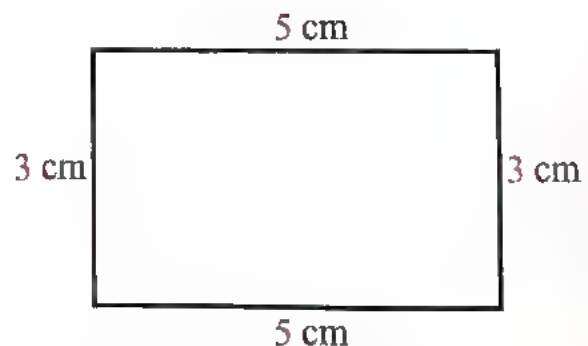
$$\begin{aligned} \text{The perimeter} &= \dots + \dots + \dots + \dots + \dots \\ &= \dots \text{ cm} \end{aligned}$$



$$\begin{aligned} \text{The perimeter} &= \dots + \dots + \dots + \dots + \dots + \dots \\ &= \dots \text{ cm} \end{aligned}$$



$$\begin{aligned} \text{The perimeter} &= \dots + \dots + \dots + \dots \\ &= \dots \text{ cm} \end{aligned}$$



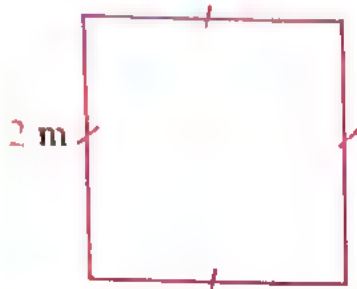
$$\begin{aligned} \text{The perimeter} &= \dots + \dots + \dots + \dots \\ &= \dots \text{ cm} \end{aligned}$$

Perimeter of the square = side length \times 4

The side length of the square = it's perimeter \div 4

Practice 2

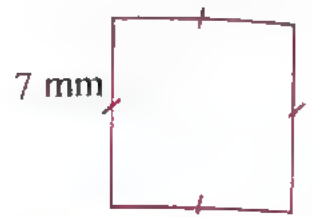
Find the perimeter of the following square as the Ex :



The perimeter = \times
= m



The perimeter = ... \times ...
= cm



The perimeter = ... \times ...
= mm

Practice 3

Complete the following :

- a The perimeter of a square with side 5 m

Solution The perimeter = \times = m

- b The side length of a square whose perimeter 8 cm

Solution The side length = \div 4 = cm

- c A piece of land in the form of a square with side 40 m

Solution It's perimeter = \times = m

- d Which is longer : the perimeter of square with side 3 cm or perimeter of equilateral triangle with side 5 cm ?

Solution Perimeter of square = \times = cm

Perimeter of triangle = \times = cm

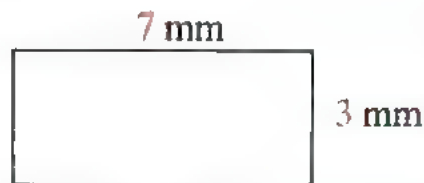
The longer is

Perimeter of rectangle = (Length + width) \times 2

Practice 4 Find the perimeter of the following :



The perimeter = (..... +) \times 2
= cm



The perimeter = (..... +) \times 2
= mm

The length of the rectangle = half it's perimeter - the width
The width of the rectangle = half it's perimeter - the length

Practice 5 Complete the following :

a A rectangle with dimensions 6 cm. and width 5 cm , find it's perimeter

Solution Perimeter of the rectangle = (..... +) \times = cm

b A rectangle with perimeter 30 cm. , and it's length 4 cm. Find it's width.

Solution The perimeter of rectangle = (length + width) \times 2 = 30 cm

Half it's perimeter = (length + width)

15 = 10 + width so The width = cm

c Rectangle with perimeter 18 cm , it's width 4 cm . Find it's length.

Solution The perimeter of rectangle = 18 cm

so half it's perimeter = 9 cm

The length = - = cm

d A rectangle it's length twice it's width , find it's perimeter if
it's width 7 cm .

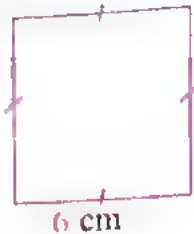
Solution The length = twice the width = 2 \times = cm

The perimeter = (..... +) \times 2 = cm

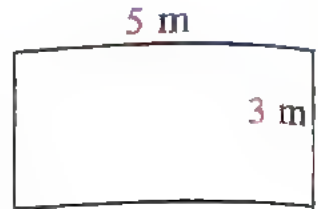
Self-check on lesson (66) First

1 Find the perimeter of the following shapes:

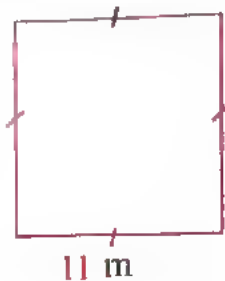
$$\begin{aligned} \text{Perimeter} &= \dots \times \dots \\ &= \dots \text{ cm} \end{aligned}$$



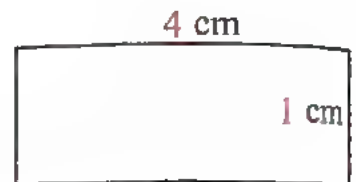
$$\begin{aligned} \text{Perimeter} &= \\ &= (\dots + \dots) \times 2 \\ &= \dots \text{ m} \end{aligned}$$



$$\begin{aligned} \text{Perimeter} &= \dots \times \dots \\ &= \dots \text{ m} \end{aligned}$$



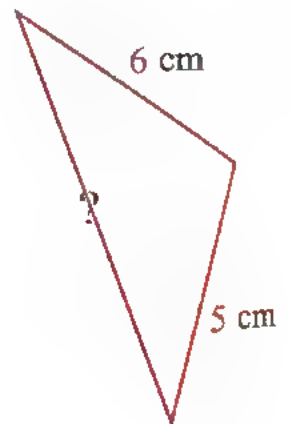
$$\begin{aligned} \text{Perimeter} &= \\ &= (\dots + \dots) \times 2 \\ &= \dots \text{ cm} \end{aligned}$$



2 Answer the following :

The perimeter of the opposite figure is 21 cm

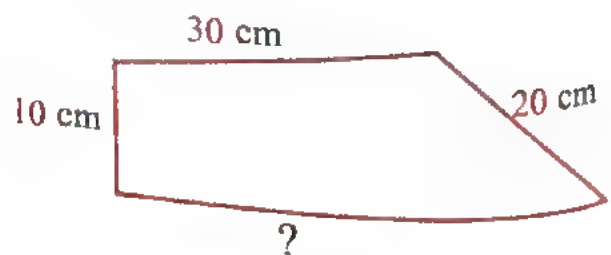
Then the length of the unknown side = cm



3 Answer the following :

The perimeter of the opposite figure 100 cm

Then the length of the unknown side = cm



4 Answer the following :

- a Two square the side of the first 4 cm and the side of the second 5 cm .
Complete :

Solution Perimeter of the First = / = cm
Perimeter of the Second = / = cm
The Sum of the perimeters = + = cm

- b Two square the sum of their perimeter 40 cm , the side of the first 4 cm . Find the side of the other?

Solution Perimeter of the First = $4 \times \dots\dots\dots = \dots\dots\dots$ cm
Perimeter of the Second = $40 - \dots\dots\dots = \dots\dots\dots$ cm
The sides of the second = $\dots\dots\dots \div 4 = \dots\dots\dots$ cm

5 Answer the following :

A triangular piece of land with equal sides , it's perimeter 150 cm.
Find the length of each side.

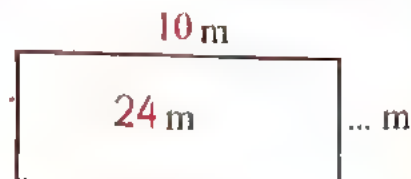
Solution Perimeter of the triangle = m
The side length = $150 \div 3 = \dots\dots\dots$ m



Activities from Math Journal

Activity A rectangular garden. They give you 24 meters of fencing that they had left over. You want your garden to be 10 meters long. Find the width of your garden.

Half the perimeter = m
The width = half the perimeter - length
= - = m



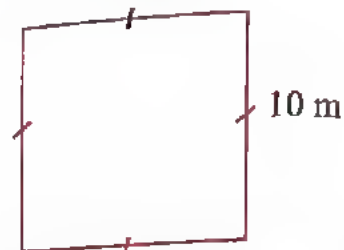
Second the Area

Area of square = side length \times it's self

Activity 1 Find the area of the following :



The area = $6 \times 6 = 36 \text{ cm}^2$
(It read as 36 square centimetres)



The area = $10 \times 10 = 100 \text{ m}^2$
(It read as 100 square meters)

Practice 1 Answer the following :

a Find the area of a square whose side 7 cm .

Solution The area = \times = cm^2

b Find the area of a square whose side 4 m .

Solution The area = \times = m^2

c Find the area of a square with perimeter 32 cm .

Solution It's side = the perimeter $\div 4 =$
= \div = cm

The area = \times = cm^2

d Find the area of a square whose side equal the side of equilateral triangle whose perimeter 12 cm .

Solution The side of triangle = the perimeter $\div 3 =$
= \div = cm
The area of square = \times = cm^2

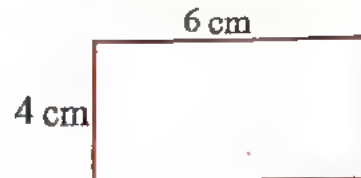
Area of rectangle = Length \times width

The length = the area \div the width

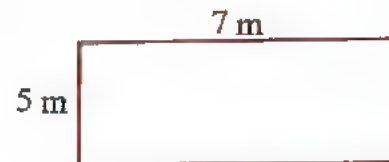
The width = the area \div the length

Activity 2 Find the area of the following rectangles :

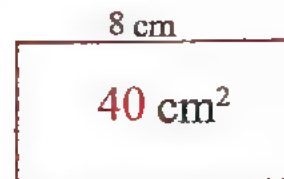
a The area = 6×4
= 24 cm^2



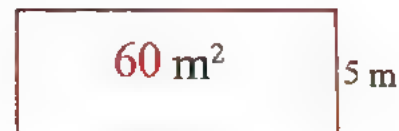
b The area = 5×7
= 35 m^2



c The area of the rectangle = 40 cm^2
it's width = the area \div the length
= $40 \div 8 = \dots\dots\dots \text{ cm}$



d The area of the rectangle = 60 m^2
it's length = the area \div the width
= $60 \div 5 = \dots\dots\dots \text{ m}$



Practice 4 Answer the following :

Which is greater area of square with side 6 cm or area of rectangle with dimensions 6 cm , 5 cm.

Solution Area of square = $\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots \text{ cm}^2$

Area of rectangle = $\dots\dots\dots \times \dots\dots\dots = \dots\dots\dots \text{ cm}^2$

The greater is $\dots\dots\dots$

Self check on lesson (66) Second

1 Find the area of following :



$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ cm}^2 \end{aligned}$$



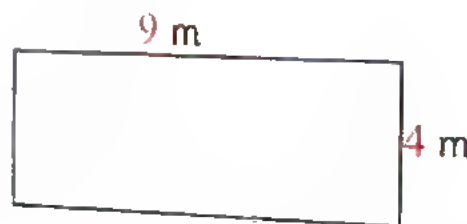
$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ cm}^2 \end{aligned}$$



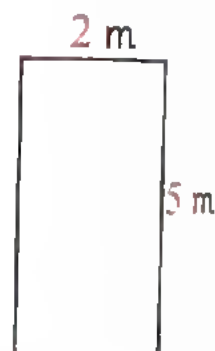
$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ m}^2 \end{aligned}$$



$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ cm}^2 \end{aligned}$$

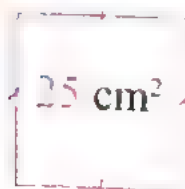


$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ m}^2 \end{aligned}$$

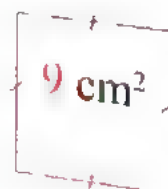


$$\begin{aligned} \text{The area} &= \dots \times \dots \\ &= \dots \text{ m}^2 \end{aligned}$$

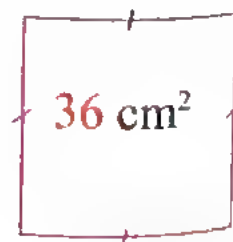
2 Complete as the example :



$$\begin{aligned} 5 \cdot 5 &= 25 \\ \text{The side length} &= 5 \text{ cm} \end{aligned}$$



$$\begin{aligned} \dots \cdot \dots &= 9 \\ \text{The side length} &= \dots \text{ cm} \end{aligned}$$



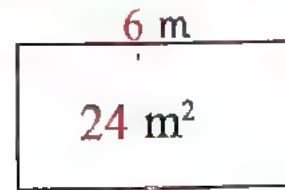
$$\begin{aligned} \dots \cdot \dots &= 36 \\ \text{The side length} &= \dots \text{ cm} \end{aligned}$$

3 Complete the following :

a Area of rectangle = 24 m^2 .

The width = $\text{Area} \div \text{Length}$

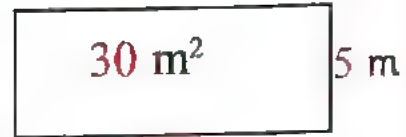
$$= \dots \div \dots = \dots \text{ m}$$



b Area of rectangle = 30 m^2 .

The length = $\text{Area} \div \text{width}$

$$= \dots \div \dots = \dots \text{ m}$$



4 Complete the following :

a A square with side 5 cm then :

It's perimeter = $\dots \times \dots = \dots \text{ cm}$

It's area = $\dots \times \dots = \dots \text{ cm}^2$

b A rectangle with 7 cm length and 5 cm width.

Area of rectangle = $\text{Length} \times \dots$

$$= \dots \times \dots = \dots \text{ cm}^2$$

5 Choose the correct answer :

a A square with side 5 cm , it's area = $\dots \text{ cm}^2$ (15 , 20 , 25)

b A square with side 5 cm , it's perimeter = $\dots \text{ cm}$ (15 , 20 , 25)

c Area of rectangle with dimensions 6 cm , 7 cm = $\dots \text{ cm}^2$
(13 , 26 , 42)

d The perimeter of rectangle whose dimensions 6 cm , 7 cm = $\dots \text{ cm}$
(13 , 26 , 42)

e A square with perimeter 12 cm , it's side = $\dots \text{ cm}$ (3 , 8 , 9)

f A rectangle with perimeter 20 cm , it's length 6 cm,
then it's width = $\dots \text{ cm}$ (5 , 4 , 26)

g A rectangle with perimeter 8 cm , it's width 1 cm .
It's length = $\dots \text{ cm}$ (3 , 7 , 8)

Activities from Math Journal

Activity Calculate the area of the coloured shape.

First strategy :

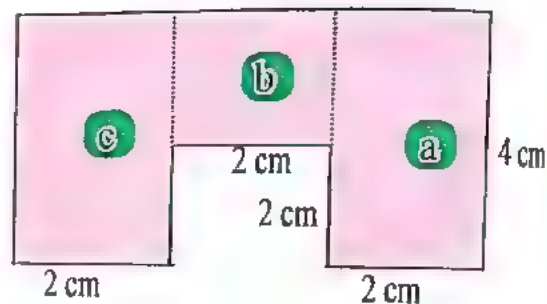
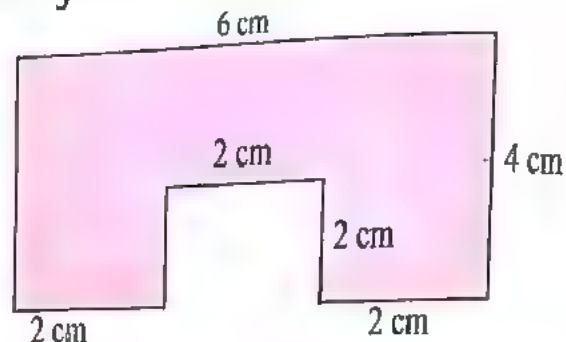
Divide the shape into 3 shapes as show then follow.

$$\text{Area of } \textcircled{a} = 2 \times 4 = 8 \text{ cm}^2$$

$$\text{Area of } \textcircled{b} = 2 \times 2 = 4 \text{ cm}^2$$

$$\text{Area of } \textcircled{c} = 2 \times 4 = 8 \text{ cm}^2$$

$$\text{Area of shape} = 8 + 4 + 8 = 20 \text{ cm}^2$$



Second strategy :

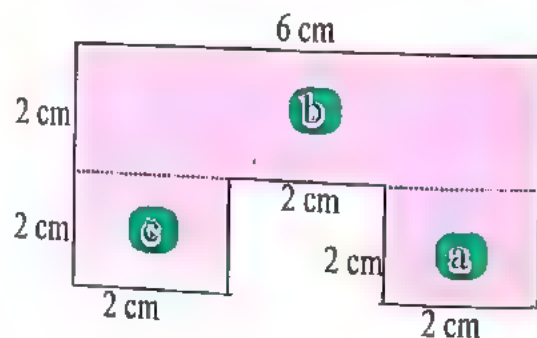
Divide the shape into 3 shapes as show then follow.

$$\text{Area of } \textcircled{a} = \dots\dots\dots$$

$$\text{Area of } \textcircled{b} = \dots\dots\dots$$

$$\text{Area of } \textcircled{c} = \dots\dots\dots$$

$$\text{Area of shape} = \dots\dots\dots$$



Third strategy

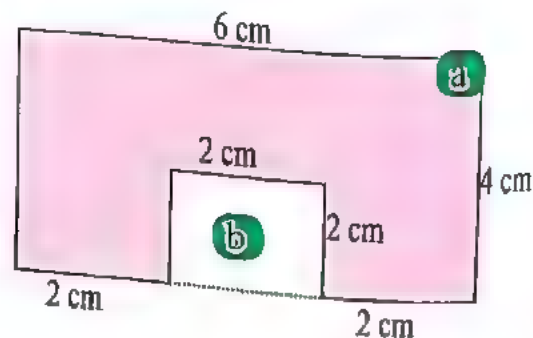
Complete the rectangle

$$\text{Area of } \textcircled{a} = 4 \times 6 = \dots\dots\dots \text{ cm}^2$$

$$\text{Area of } \textcircled{b} = 2 \times 2 = \dots\dots\dots \text{ cm}^2$$

$$\text{Area of required shape} = \dots\dots\dots$$

$$= \dots\dots\dots \text{ cm}^2$$

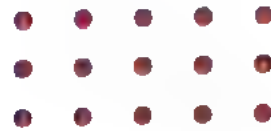


Lesson (67 , 68)

Word Problems

Activity 1 Put (✓) or (×) :

1 Array name



(a) Array 5 by 3 (×) Array : number of row by number of column

↓ × ↓
3 5

(b) Array 3 by 5 (✓)

2 Array name



(a) Array 5 by 1 (.....) Array : number of row by number of column

↓ × ↓
.....

(b) Array 1 by 5 (.....)

3 Find 6×8

(a) $6 \times 8 = 14$ (.....)

(b) $6 \times 8 = 48$ (.....)

Notice

the difference between the symbols
+ and × Where $6 + 8 = 14$

4 Find $30 \div 6$

(a) $30 \div 6 = 24$ (.....)

(b) $30 \div 6 = 5$ (.....)

Notice

the difference between the symbols
÷ and - Where $30 - 6 = 24$

5 Find $(3 \times 4) \times 5$

(a) $(3 \times 4) \times 5 = 7 \times 5 = 35$ (.....)

(b) $(3 \times 4) \times 5 = (3 \times 5) + (4 \times 5) = 15 + 20 = 35$ (.....)

(c) $(3 \times 4) \times 5 = 12 \times 5 = 60$ (.....)

Activity 2 5 cars each car has 4 boxes ,each boxes has 3 bike . Find the number of all bikes ?



Number of bikes = No. Cars \times No. Boxes \times No. bike

$$\begin{aligned}
 &= \quad \times \quad \times \\
 &= (\quad \times \quad) \times \\
 &= \quad \times \quad = \quad \text{bikes}
 \end{aligned}$$

Practice

3 planes arrived at the airport, including : 2 planes in each plane 4 cars, and the third plane has only one car. How many cars arrived at the airport?



The first method

Number of Cars =

$$\begin{aligned}
 &= \text{No. of cars on The first plane} + \text{No. of cars on The second plane} + \text{No. of cars on The third plane} \\
 &= \quad + \quad + \quad \\
 &= (\quad + \quad) + \quad = \quad \text{Cars}
 \end{aligned}$$

The second method

Number of Cars =

$$\begin{aligned}
 &= 2 \times \text{numbers of cars on the first plane} + \text{numbers of cars on the third plane} \\
 &= (2 \times \quad) + \quad \\
 &= \quad + \quad = \quad \text{Cars}
 \end{aligned}$$

Activities from Math Journal

Activity When solving each of the following problems:
Put (✓) or (×):

1

If you have 3 bags, each bag contained 6 pieces of apples.
How many apples did you have in all?

- a Solution : The number of apples = $3 + 6 = 9$ apples ()
 b Solution : The number of apples = $6 \div 3 = 2$ apples ()
 c Solution : The number of apples = $6 \times 3 = 18$ apples ()

2

4 boxes each has 3 bags of apples, each bags has 6 apples.
How many apples in all?

- a Solution : The number of apples = $3 + 4 + 6 = 13$ apples ()
 b Solution : The number of apples = $(6+4) \times 3 = 30$ apples ()
 c Solution : The number of apples = $3 \times 6 \times 4 = 72$ apples ()

3

Ali earns 25 LE per week for doing all his chores. On the fourth week, he forgets to take out the trash, so he only earns 20 LE. Write and solve an equation to show how much Ali earns in 4 weeks.

- a Solution : Number of pounds = $25+25+25+25 = 100$ LE. ()
 b Solution : Number of pounds = $25+25+25+20 = 95$ LE. ()
 c Solution : Number of pounds = $(25 \times 3) + 20 = 95$ LE. ()

Self - check on lesson (67, 68)

- 1 Each day, Habiba eats 10 crackers for a snack at school. On Friday, she drops 3 crackers and only eats 7. Write and solve an equation to show the total number of crackers Habiba eats during the week.

Math Journal

- a Solution : The number of what Habiba ate
 $= 10 \times 7 = 70$ piece. ()
- b Solution : The number of what Habiba ate
 $= (10 \times 7) - 3 = 70 - 3 = 67$ piece. ()
- c Solution : The number of what Habiba ate
 $= (10 \times 6) + 7 = 60 + 7 = 67$ piece. (.....)
- d Solution : The number of what Habiba ate
 $= 10 + 10 + 10 + 10 + 10 + 10 + 7 = 60 + 7 = 67$ piece. (.....)

- 2 Laila buys 24 seeds. She has 5 pots. She wants to plant 3 seeds in each pot. How many more pots does Laila need to plant all of her seeds?

Math Journal

- a Solution : Number of pots used $= 24 \div 3 = 8$ pots
 Number of pots required $= 8 - 5 = 3$ pots (.....)
- b Solution : Number of pots used $= 24 \div 3 = 8$ pots
 Number of pots required $= 8 + 5 = 13$ pots (.....)
- c Solution : Number of pots required
 $= (24 \div 3) - 5 = 8 - 5 = 3$ pots (.....)

- 3** Mrs. Mariam baked 24 chocolate chip cookies. She divided the cookies equally into 4 containers. Then, she baked more cookies so that she could put 4 more cookies in each container. How many cookies are in each container?



- a** Solution : Number of pieces in each container
 $= 24 \div 4 = 6$ pieces
 The number of pieces after the addition
 $= 6 + 1 = 7$ pieces ()
- b** Solution : Number of pieces in each container
 $= 24 \div 4 = 6$ pieces
 The number of pieces after the addition
 $= 6 + 4 = 10$ pieces ()
- c** Solution : Number of pieces after addition
 $= (24 \div 4) + 4$
 The number of pieces after the addition
 $= 6 + 4 = 10$ pieces ()

- 4** Emad earned money for completing extra chores. He earned 8 LE per hour cleaning the bedrooms. He worked for 3 hours. He also earned an extra 16 LE for vacuuming the entire house. How much money did Emad earn?



- a** Solution : Emad's whole wage $= 8 + 16 = 24$ pounds ()
- b** Solution : 3 hour fare $= 8 \times 3 = 24$ pounds
 The whole fare $= 24 + 16 = 40$ pounds ()
- c** Solution : All of Baptist's wages $= (8 \times 3) + 16$
 $= 24 + 16 = 40$ pounds ()
- d** Solution : The house cleaning fee $= 8 + 8 + 8 = 24$ pounds
 Fee for a vacuum cleaner $= 16$ pounds
 The whole fare $= 24 + 16 = 40$ pounds. ()

Lesson

(69 , 70)

Time

Activity 1 Remember that :



The time about
3 the short hand
very near to 3



The time about
7 the short hand
very near to 7



The time about
5 the short hand
very near to 5

Activity 2 Notice the two hands then write the time :

Ex



3 : 30



5 : 15



6 : 45



:



:



:

Activity 3 Remember that :

1 day = 24 hours

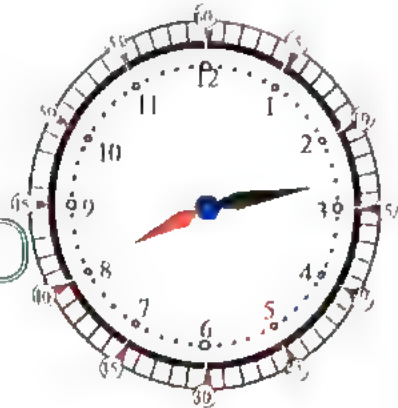
1 hour = 60 minute



8 : 00



8 : 07



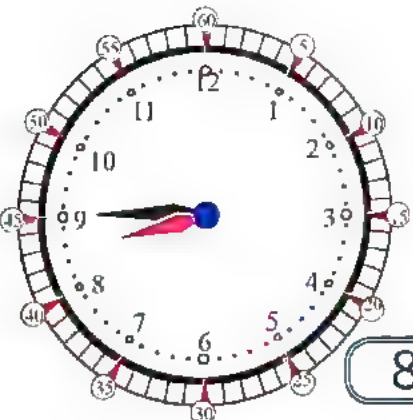
8 : 13



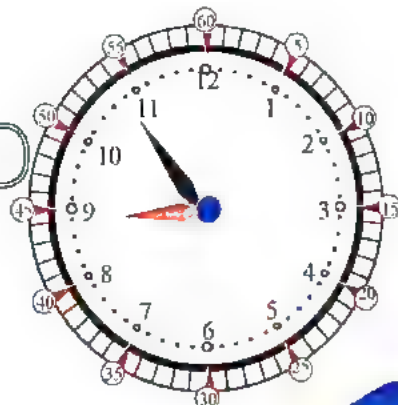
8 : 28



8 : 37



8 : 45



8 : 54

Practice 1

Draw hands according to the time :



4 : 27



5 : 07



2 : 49



6 : 35



7 : 18



1 : 11

Practice 2

Complete :

a One hour = minutes

c hours = 15 minutes

e $\frac{1}{3}$ hours = minutes

g 3 hours = minutes

i hours = 240 minutes

k $1\frac{1}{3}$ hours = minutes

b $\frac{1}{2}$ hour = minutes

d 2 hour = minutes

f hours = 180 minutes

h 5 hours = minutes

j hours = 150 minutes

l $1\frac{1}{4}$ hour = minutes

Self - check on lesson (69, 70)

1 Join as in (a) :

a	One hour	=	..... minute	15
b	$\frac{1}{4}$ hour	=	..... minute	60
c	..... hour	=	20 minute	150
d	2 hours and half	=	..... minute	80
e	$\frac{1}{2}$ hour	=	..... minute	Third
f	..... hour	=	180 minute	3
g	$1\frac{1}{3}$ hour	=	..... minute	30

2 Arrange the following:

a $\frac{1}{3}$ hour , one hour , 90 minutes , $\frac{1}{3}$ hour , 45 minutes

In an ascending order : $\frac{1}{3}$ hour ,

Solution $\frac{1}{3}$ hr = minute , one hour = minute , $\frac{1}{3}$ hr = minute

In an ascending order :

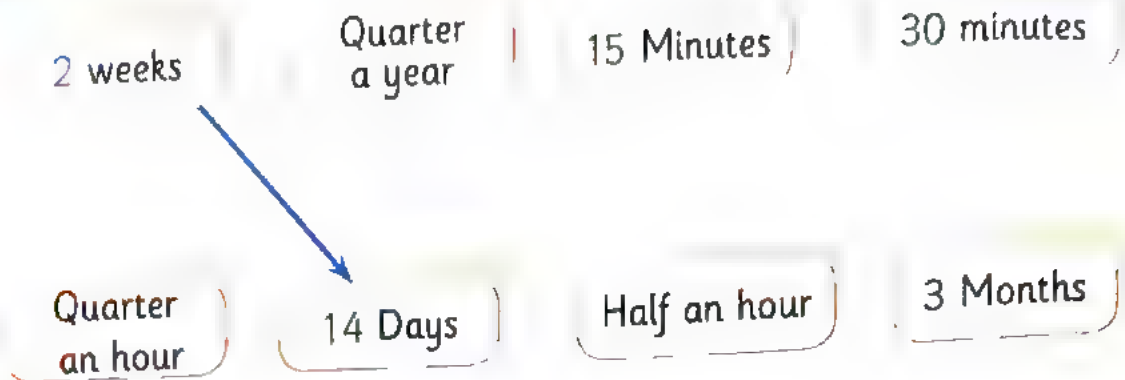
b $\frac{1}{4}$ hour , 20 minutes , hour , 90 minutes , $\frac{2}{3}$ hour

In a descending order :

Solution $\frac{1}{4}$ hr = minute , one hour = minute , $\frac{2}{3}$ hr = minute

In a descending order :

- 4 Join the equal as the Ex :

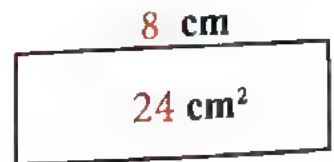


- 5 Area of rectangle 24 cm^2 , it's length 8 cm . Find it's width :

Solution

Area of rectangle = length \times width

Width = Area \div length = $\dots \div 8 = \dots \text{ cm}$



- 6 Draw hands according to the time :



1 : 28



10 : 17



7 : 54

- 7 Hassan has 3 boxes each box has 4 bags, each bag has 6 toys. What is the number of all toys?

Solution

Number of toys = $\dots \times \dots \times \dots = (\dots \times \dots) \times \dots$
 $= \dots \times \dots = \dots \text{ toys}$

1 Choose the correct answer :

a An hour = minutes (30, 60, 20, 15)

b Number of week's days = days (7, 6, 5, 8)

c From the factors of (15) (7, 5, 10, 2)

d 120 minutes = hours (2, 3, 1, 4)

e $30 \div 6 = \dots\dots\dots$ (24, 6, 5, 10)

f The perimeter of square with side 7 cm = cm (11, 28, 14, 21)

2 Complete :

a $(4 \times 5) \times \dots = 20$

b $3 \times (2 \times \dots) = 18$

c $(27 \div 3) + 1 = \dots$

d $(9 - 9) \times 5 = \dots$

e $27 \div \dots = 3$

f $10 \times \dots = 50$

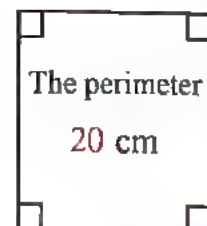
3 Find the Area of a square whose perimeter 20 cm :

Solution

Side length = perimeter $\div 4 = \dots\dots\dots$ cm

Area of square = side \times itself

= \times = cm^2



- 4 I have a bag with pens and markers inside.
The objects in my bag have a mass of 100 grams in all.
There are 4 pens, each with a mass of 10 grams.
How many markers do I have in my bag
if each marker has a mass of 20 grams?



Solution

A mass of all pens = gram

A mass of pens = $10 \times 4 =$ gram

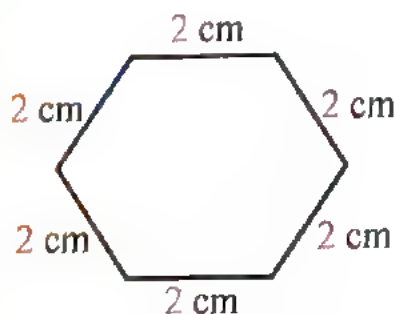
A mass of markers = $100 - 40 =$ gram

Number of markers = $60 \div 20 =$ Pen

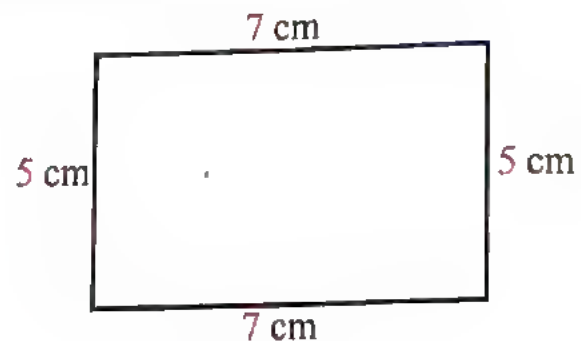
- 5 Join the equal :

- a 72 hours = days Quarter
b 2 days = hours 240
c hours = 15 minute 3
d 10 days = hours 48

- 6 Find the perimeter of the following :



The perimeter = cm



The perimeter = cm

Chapter Two



Vocabulary

Eighths	أثمان	Greater than	أكبر من
Equal parts	أجزاء متساوية	Less than	أقل من
Fair shares	تقسيم بالتساوي	Gram	جرام (جم)
Fourths	أرباع	Kilogram	كيلو جرام (كجم)
Fraction	كسر	Mass	كتلة
Halves	أنصاف	Set	مجموعة
Thirds	أثلاث	Divide	يقسم
Whole 1	واحد صحيح	Division	تقسيم - قطاع
Denominator	المقام	Factors	عوامل
Numerator	البسط	Break the unit	جزء الوحدة
Unit Fraction	كسر الوحدة	Represents	يعرض

Content

Bakkar
Self-Check

Bakkar
Exercise
on lessons

Exercise
inspired from
Math Journal

Exercise
inspired from
Discover

مع تمنياتي بالنجاح والتفوق
مسترو وليد المصري
معلم خبير رياضيات
م : ٠١٢٢٩٤٧٩٤٨

Lesson (71 , 72)

The fraction as a part of 1

(The fraction)

A number that expresses the number of equal parts of whole numbers, or the number of elements in a group of things.

The chart



Vocabulary

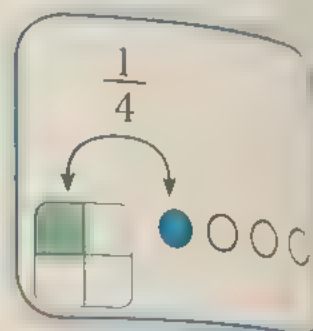


1 → Numerator
2 → Denominator



$\frac{2}{3}$

Part
Whole



The partions must be equal



$\frac{2}{6}$
 $\frac{4}{6}$

Green
Purple



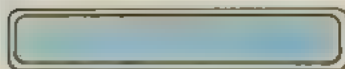
$\frac{3}{8}$
 $\frac{5}{8}$

Blue

Vocabulary

Whole one

1



Fifth

$\frac{1}{5}$



Half

$\frac{1}{2}$



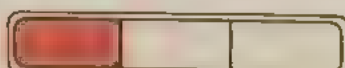
Sixth

$\frac{1}{6}$



Third

$\frac{1}{3}$



Seventh

$\frac{1}{7}$



Fourth

$\frac{1}{4}$



Eighth

$\frac{1}{8}$



The fraction

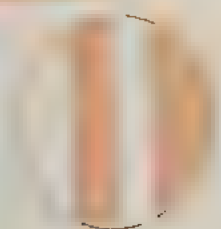
Activity 1 If 2 people want to share a cookie fairly, which image shows how they should cut the cookie?



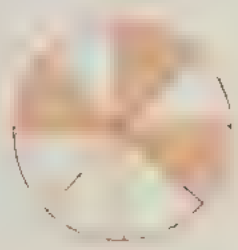
Practice If 4 people want to share a cookie fairly, Which image shows how they should cut the cookie?



Fraction Represents equal parts of the one :



Not equal



Equal

The parts must be equal

Writing fraction

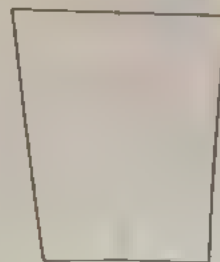
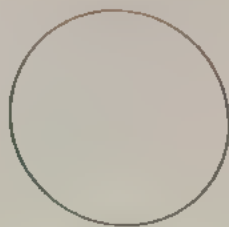
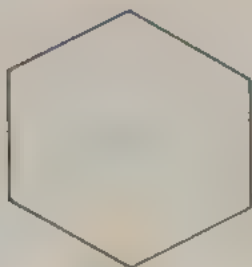
$\frac{3}{4}$ → Numerator (number of coloured parts)
→ Denominator (number of all parts)

Unit fraction The fraction that has 1 in the numerator

Ex : $\frac{1}{9}$ $\frac{1}{2}$ $\frac{1}{7}$ $\frac{1}{3}$ $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{8}$

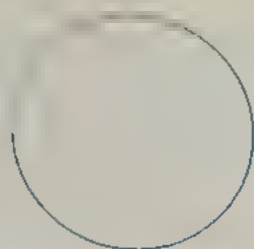
Practice

Circle the shapes that are divided into equal parts (fair shares) :

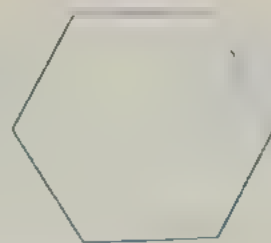


Practice

Divide the following shapes into the fractional part listed below :



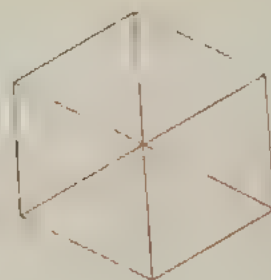
Four equal parts (fourths)



Six equal parts (sixths)

Practice

Match the picture of the fraction to its name as the Ex :



Third - Thirds

Sixth - Sixths

Fourth - Fourths

Circle the shapes that are divided into equal parts (fair shares):


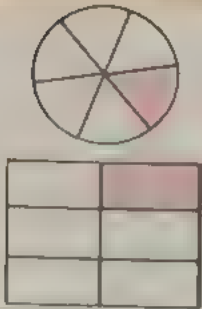

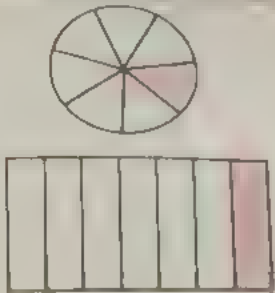
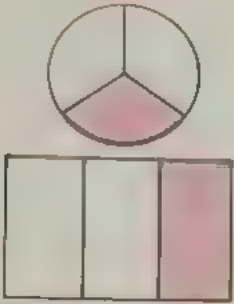
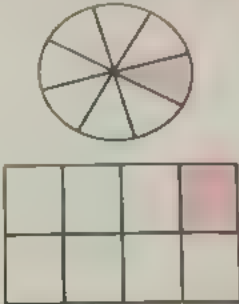
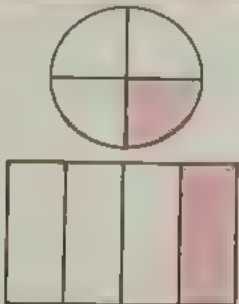
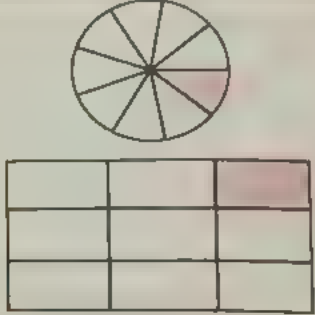
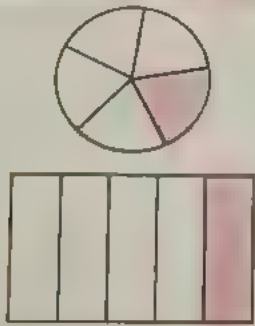
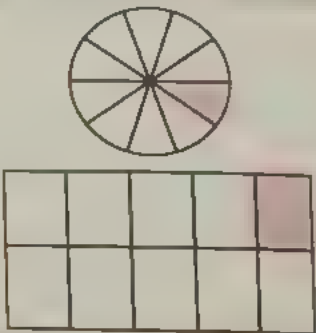


2 Dividing the bar into equal parts (fair shares):

Bar fraction

	* Whole one								1
• 2 Halves	$\frac{1}{2}$				$\frac{1}{2}$				
• 3 Thirds	$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$				
• 4 Fourths	$\frac{1}{4}$	$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$			
• 6 Sixths	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$			
• 8 Eighths	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	

Activity 3 Notice :

Part	Shape	Part	Shape
1 (Whole)		$\frac{1}{6}$ (Sixth)	
$\frac{1}{2}$ (Half)		$\frac{1}{7}$ (Seventh)	
$\frac{1}{3}$ (Third)		$\frac{1}{8}$ (Eighth)	
$\frac{1}{4}$ (Fourth)		$\frac{1}{9}$ (Ninth)	
$\frac{1}{5}$ (Fifth)		$\frac{1}{10}$ (Tenth)	

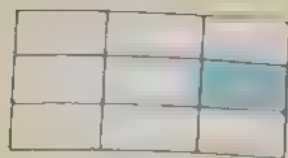


Self - check on lesson (71, 72)

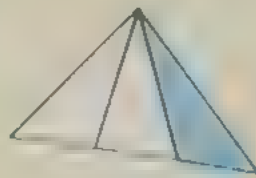
1 Write the fraction according to the coloured part



()



()



()



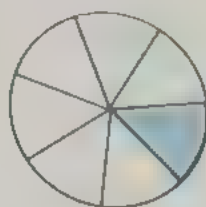
()



()



()



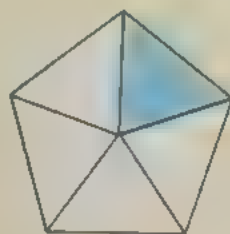
()



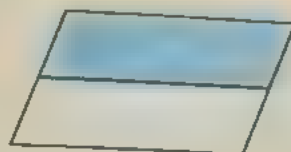
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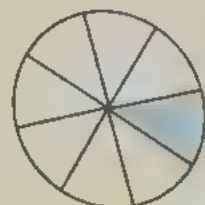
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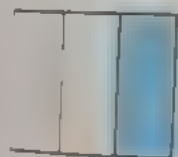
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()



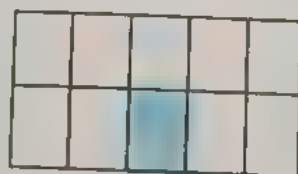
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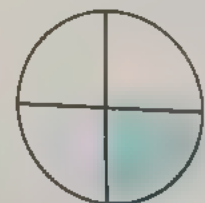
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()

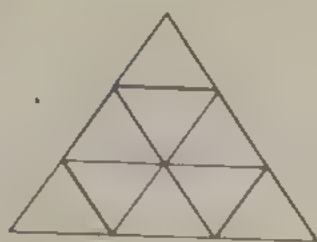


()



()

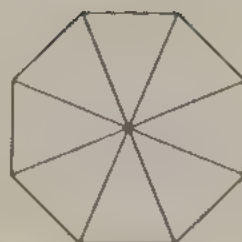
2 Colour according to the fraction :



($\frac{1}{9}$)



($\frac{1}{3}$)



($\frac{1}{8}$)



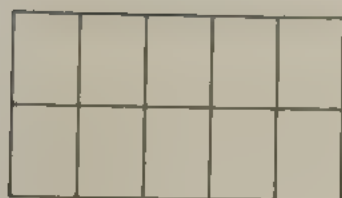
($\frac{1}{2}$)



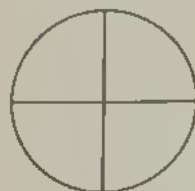
($\frac{1}{5}$)



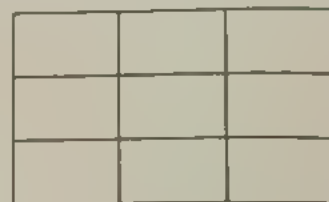
($\frac{1}{7}$)



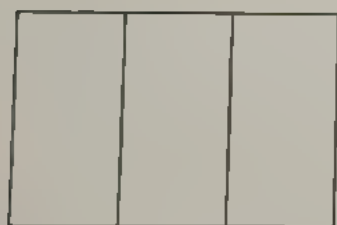
($\frac{1}{10}$)



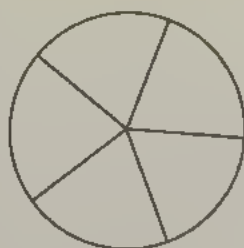
($\frac{1}{4}$)



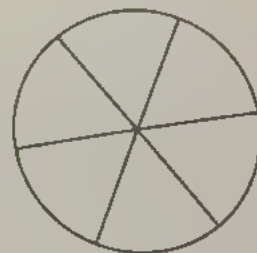
($\frac{1}{9}$)



($\frac{1}{3}$)



($\frac{1}{5}$)



($\frac{1}{6}$)

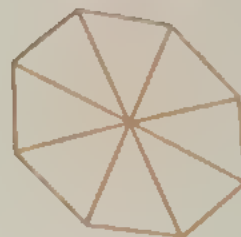


3 Join with the suitable shape :

Eighth



Half



Third



4 Complete as in (a) :

($\frac{1}{2}$) = Half

..... = Sixth

($\frac{1}{5}$) =

($\frac{1}{3}$) =

= Seventh

($\frac{1}{9}$) =

($\frac{1}{8}$) =

..... = Fourth

= Third

($\frac{1}{10}$) =

Lesson (73 , 74)

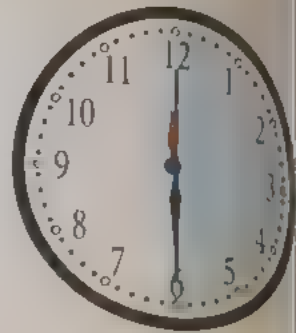
Word problems on fractions

- 1 Divide the clock face into two equal parts then write the number of minute in this part :

Draw a line connect 6 and 12 shade the part that represent $\frac{1}{2}$ hr

One hour = 60 minute

Half an hour = 30 minutes because $30+30=60$



- 2 Divide the clock face into four equal parts then write the number of minute in this part :

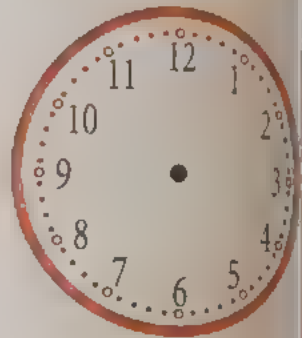
Draw line connect 6 and 12 ,

Draw line connect 3 and 9 .

Shade the part that represent $\frac{1}{4}$ hr

Quarter of an hour = minutes

Because : $15 + 15 + 15 + 15 = 60$

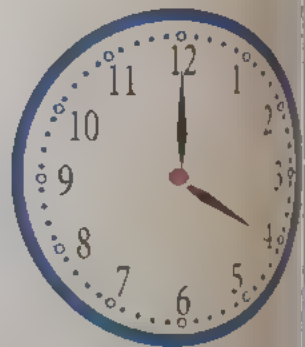


- 3 Divide the clock face into three equal parts then write the number of minute in this part :

Draw line connect the centre and 12 ,
draw line connect the centre and 4
and draw line connect the centre and 8
shade the part that represent hr

A third of an hour = minutes

Because : $20 + 20 + 20 = 60$



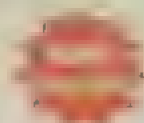
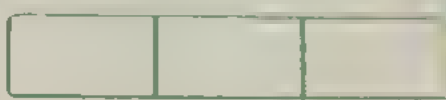
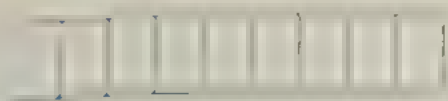
Practice

Write the fraction that represent the shaded part



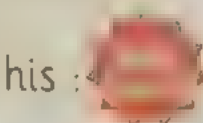
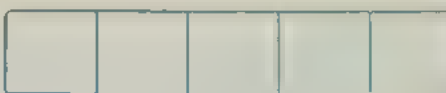
Practice

Nayan has a long loaf. She wants to share it with 7 of her friends. Colour the fraction bar model that expresses this



Practice

Ram has a long piece of wood. He needs to cut it into enough pieces to share with his 7 friends. Colour the fraction bar model that expresses this :

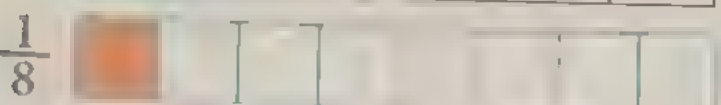
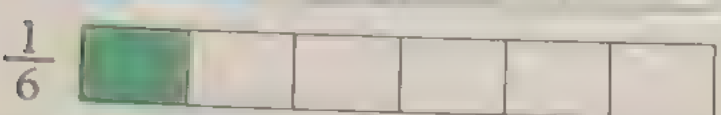
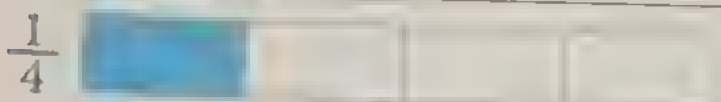
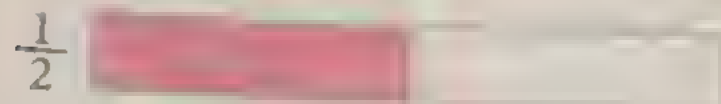


Practice

Samir has a candy bar. He took 2 days to eat it and ate the same amount each day. On Monday, he ate 1 piece. On Tuesday he ate 1 more piece. Colour the fraction bar model that expresses this :



Activity 2 Relation between the fraction



The greatest part is $\frac{1}{2}$

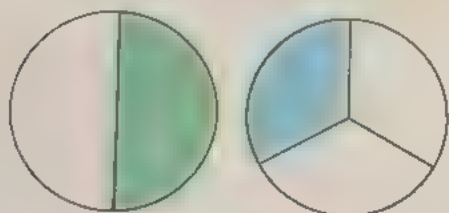
The smallest part is $\frac{1}{8}$

From the above we find that

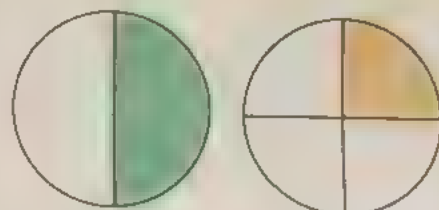
$$\frac{1}{2} > \frac{1}{3} > \frac{1}{4} > \frac{1}{6} > \frac{1}{8}$$

The larger denominator, mean the smaller fraction in value

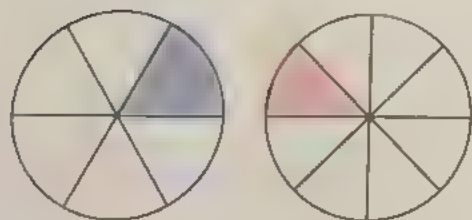
Activity 3 The relationship between fractions on the parts of a circle



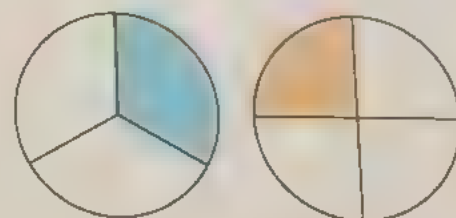
$$\frac{1}{2} > \frac{1}{3}$$



$$\frac{1}{2} > \frac{1}{4}$$



$$\frac{1}{6} > \frac{1}{8}$$



$$\frac{1}{3} > \frac{1}{4}$$

The larger denominator, mean the smaller the fraction

Put (, ,) :

$\frac{1}{2} < \frac{1}{6}$

$\frac{1}{6} < \frac{1}{3}$

$1 < \frac{1}{4}$

$\frac{1}{3} < \frac{1}{8}$

$\frac{1}{3} < \frac{1}{3}$

$\frac{1}{8} < \frac{1}{6}$

$\frac{1}{4} < \frac{1}{2}$

$\frac{1}{2} < \frac{1}{3}$

$\frac{1}{4} < \frac{1}{3}$

needs $\frac{1}{2}$ L of oil and $\frac{1}{3}$ L of water to make a large batch of muffins.
Will use more oil or more water?

$\frac{1}{3} >$

The fraction with
the largest denominator
is the smaller fraction

Quantity of greater than the quantity of

needs to cut some wood for a project.
He needs $\frac{1}{2}$ of a meter for the top and $\frac{1}{3}$ of a meter for the base.

Which piece of wood will be larger?

$>$

the piece meter is the largest.

Your friend says that $\frac{1}{2}$ is greater than $\frac{1}{3}$.
Is **Walid** correct?

Solution The fraction with the largest denominator is the smaller fraction.

So: fraction of $\frac{1}{2}$ > fraction of $\frac{1}{3}$

Self check on lesson (73, 74)

1

Notice the figure then compare using ($>$, $=$, $<$):

Remember

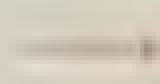
The fraction with the largest denominator is the smaller fraction



$\frac{1}{8}$



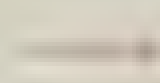
$\frac{1}{6}$



$\frac{1}{4}$



$\frac{1}{5}$



$\frac{1}{5}$



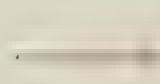
$\frac{1}{6}$



$\frac{1}{7}$



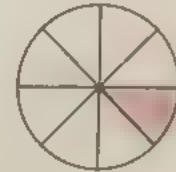
$\frac{1}{6}$



$\frac{1}{7}$

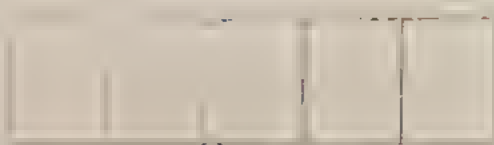
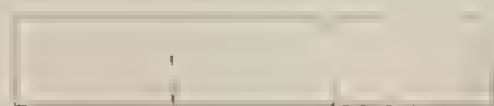
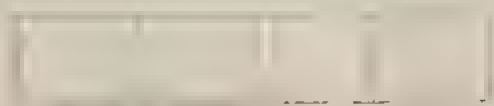


$\frac{1}{8}$



2

Dalia made a rectangular cake. She and her five friends ate it. Colour the fraction bar model that expresses this:



3 Circle the greatest fraction :

$\frac{1}{3} \quad \frac{1}{4}$

$\frac{1}{8} \quad \frac{1}{6} \quad \frac{1}{4}$

$\frac{1}{4} \quad \frac{1}{3} \quad \frac{1}{2}$

$\frac{1}{9} \quad \frac{1}{8}$

$\frac{1}{6} \quad \frac{1}{4} \quad \frac{1}{3} \quad \frac{1}{5}$

$\frac{1}{8} \quad \frac{1}{9} \quad \frac{1}{6} \quad \frac{1}{7}$

4 Arrange the following fraction :

$\frac{1}{3}, \frac{1}{2}, \frac{1}{8}, \frac{1}{6}, \frac{1}{4}$

In an ascending order : , , , ,

$\frac{1}{9}, \frac{1}{5}, \frac{1}{7}, \frac{1}{10}, \frac{1}{3}$

In a descending order : , , , , ,

5 Circle the smaller fraction :

$\frac{1}{5}, \frac{1}{8}$

$\frac{1}{4}, \frac{1}{5}$

$\frac{1}{3}, \frac{1}{2}$

$\frac{1}{6}, \frac{1}{9}$

$\frac{1}{12}, \frac{1}{10}$

$\frac{1}{6}, \frac{1}{7}$

Lesson (75 , 76)

Comparing two unit fractions with different volume

Activity 1 Weight

- The kilogram is used to measure heavy things
- The gram is used to measure the light things



1 kilogram = 1000 gram



Practice 1

Circle the suitable unit of weight for each estimation as the Ex :



3 (Gram - Kilogram)



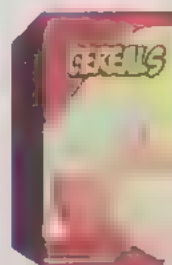
15 (Gram - Kilogram)



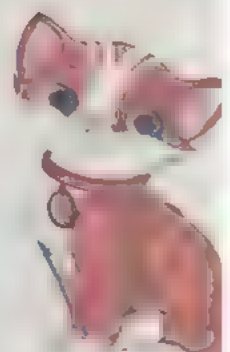
58 (Gram - Kilogram)



6 (Gram - Kilogram)



350 (Gram - Kilogram)



4 (Gram - Kilogram)



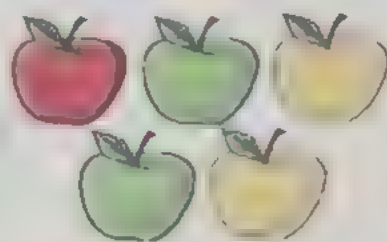
Activity 2 Write the fraction that represent the number of girls :

$$\frac{\text{Numerator (Number of girls)}}{\text{Denominator (all Number)}} \longrightarrow \frac{1}{2}$$



Practice 2 Write the fraction that represent the red apple :

$$\frac{\text{Numerator (Number of red apples)}}{\text{Denominator (all Number of apples)}} \longrightarrow \frac{1}{5}$$



Practice 1 Write the fraction that represent the small bird :

$$\frac{\text{Numerator (Number of birds)}}{\text{Denominator (all Number of birds)}} \longrightarrow \frac{1}{3}$$



Practice 1 Write the fraction that represent the number of cats:

$$\frac{\text{Numerator (Number of cats)}}{\text{Denominator (all Number)}} \longrightarrow \frac{1}{4}$$

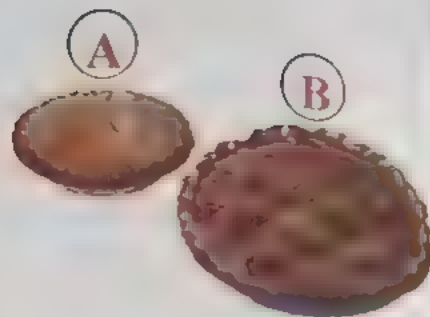


Activity 3 Which is greater? :

The pie (B) > The pie (A)

So : half (B) > half (A)

So : $\frac{1}{2}$ (B) > $\frac{1}{2}$ (A)



Practice Which is greater half (A) or half (B) ? :

* Shape > Shape

So : half the shape > Half the shape

So : $\frac{1}{2}$ Shape > $\frac{1}{2}$ Shape ..

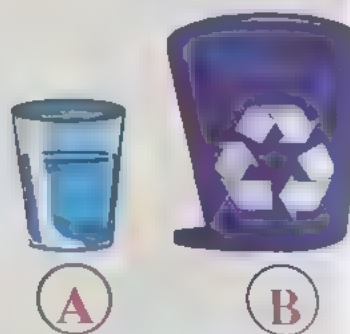


Practice Which has less:
Half figure (A) or half figure (B) ? :

* Shape < Shape

So : Half the shape .. < Half the shape

So : $\frac{1}{2}$ Shape < $\frac{1}{2}$ Shape



Practice Complete using (>, =, <) :



Figure 1

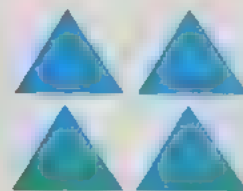


Figure 2

Half number of figure 1 () Half number of figure 2

Activity 4 Which is greater half a box with 6 balls or half a box with 10 balls ?:

The box that has 10 balls



The box that has 6 balls

Half the box that has 10 balls



Half the box that has 6 balls



Which is longer :
Half Saturday or half time of lunch ?

Saturday
That has hr

Longer
than

Time of lunch
That take hr

One day hr
Time of lunch
about 1 hr

Half Saturday
That has hr

Longer
than

Half Time of lunch
That take hr

Complete using ($>$, $=$, $<$) :



Figure A



Figure B



Figure C



Figure D

Half figure A

half figure B

Half figure C

half figure D

Self - check on lesson (75 , 76)

1 Circle according to the fraction as in () :



$$\frac{5}{6}$$



$$\frac{1}{3}$$



$$\frac{2}{7}$$



$$\frac{3}{4}$$



$$\frac{3}{5}$$



$$\frac{7}{8}$$



2 Colour as the fraction :



$$\frac{1}{8}$$

The sheep with red =



$$\frac{3}{8}$$

The sheep with blue =



$$\frac{4}{8}$$

The sheep with green =



Number of red sheep =



Number of sheep is greater than number of blue sheep.



3 Complete :



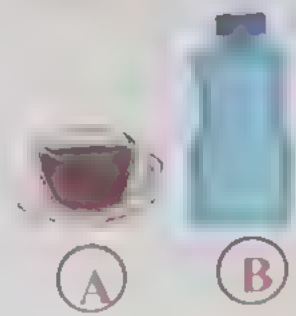
Weight of watermelon =
 Half the weight of watermelon =

4 Witch has less half figure (A) or half figure (B) :

Figure (A) < Figure

So : Half Figure < half Figure

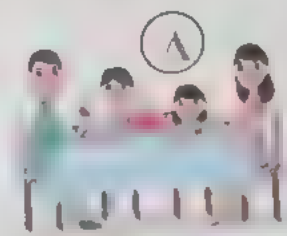
So : $\frac{1}{2}$ Figure < $\frac{1}{3}$ Figure



5 Which is greater: half family (A) or half family (B) :

Family of (B) has 6 members > Family of has members

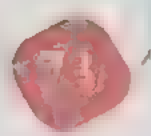
Half family of (B) has 3 members > Half family of has members



6 Complete :

Weight of watermelon Weight of apple

Half the weight of watermelon half the weight of apple



Activity Notice

Number of parts in 1

1 One

Whole one



$\frac{1}{2}$ Second one part from 2 equal parts



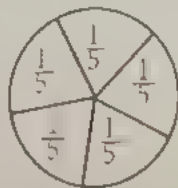
$\frac{1}{3}$ Third one part from 3 equal parts



$\frac{1}{4}$ Fourth one part from 4 equal parts



$\frac{1}{5}$ Fifth one part from 5 equal parts

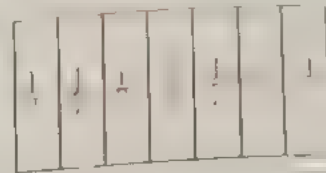


Number of parts in 1

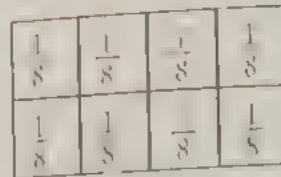
$\frac{1}{6}$ Sixth one part from 6 equal parts



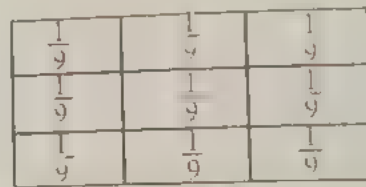
$\frac{1}{7}$ Seventh one part from 7 equal parts



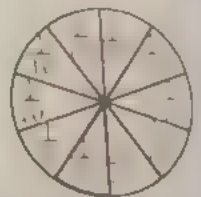
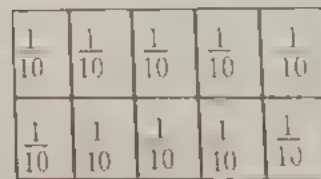
$\frac{1}{8}$ Eighth one part from 8 equal parts



$\frac{1}{9}$ Ninth one part from 9 equal parts

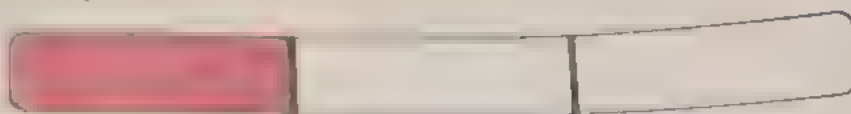


$\frac{1}{10}$ Tenth one part from 10 equal parts



Activity 2 Divide the whole one into equal parts or 4 equal parts :

$\frac{1}{3}$ 3 parts

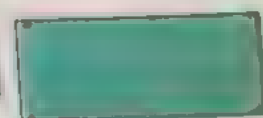


$\frac{1}{4}$ 4 parts



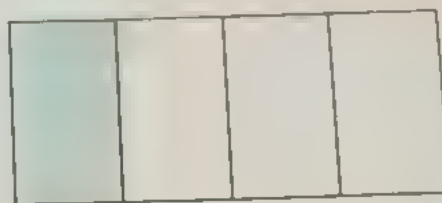
The third is longer than the fourth

So $\frac{1}{3} > \frac{1}{4}$



Practice

Write the fraction that represent the colour part:



Activity 3 From the previous exercise :

Whole one is $\frac{4}{4}$ and equal to the sum of 4 fourths

$$\text{Then : } \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{4}{4} = 1$$

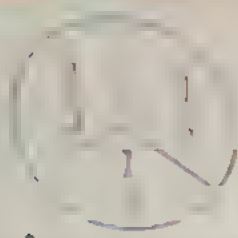
Also Whole one equal $\frac{3}{3}$ and equal to the sum of 3 thirds

$$\text{Then : } \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{3}{3} = 1$$



Practice 1

Label the unit fraction and it's numbers .



Number of fraction 3



Number of fraction



Number of fraction



Number of fraction

Practice 2

your family has 4 members .
Represent each member as a unit fraction and
express the whole family as a fraction :

- ☐ The fraction that expresses each member =
- ☐ The fraction that expresses the family = 4

Practice 3

Wagdy has one whole carton of 12 eggs.
What fraction is each egg in the carton ?
Express the whole egg carton as a fraction:

- ☐ The fraction that expresses the egg =
- ☐ The fraction that expresses the carton =

Practice 4

Label the unit fraction for the below array
then write the whole array fraction.

- ☐ The fraction that expresses the element =
- ☐ The fraction that expresses a whole array =



4 Divide the following shape into equal parts then write

a Number of parts 3

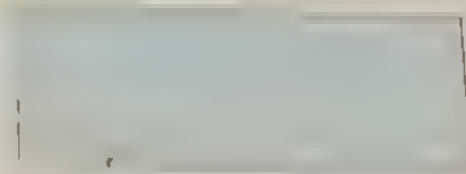
b Each part represent $\frac{1}{3}$



5 Divide the following shape into equal parts then write

a Number of parts 2

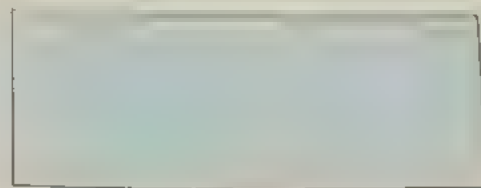
b Each part represent $\frac{1}{2}$



6 Divide the following shape into 4 equal parts then write

a Number of parts

b Each part represent



7 Complete as the Ex :

Ex $1 = \frac{7}{7}$

Solution $1 = \frac{7}{7}$

a $1 = \frac{6}{6}$

Also $1 = \frac{8}{8}$

b $1 = \frac{9}{9}$

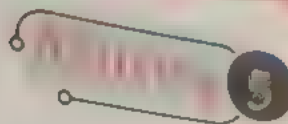
Also $1 = \frac{3}{3}$

c $1 = \frac{2}{2}$

Also $1 = \frac{4}{4}$

d $1 = \frac{1}{1}$

Also $1 = \frac{5}{5}$



5 Divide 8 counters into fourths

- Use circle or bar
- Divide 8 counters into 4 parts



If I divide 8 counters into 4 parts each ,
... each fourth has 2 counters

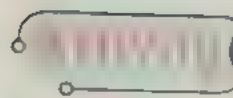
Summary

To get number of element in each part

Divide 8 by 4 then each part has 2 element

So number of parts = 4

Fourth of 8 equal $8 \div 4 = 2$ elements



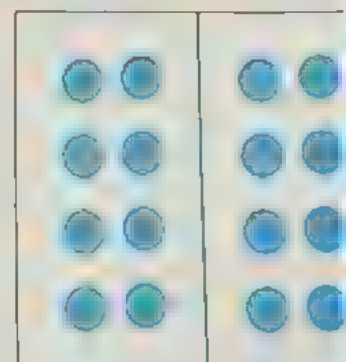
6 What is half of 16 ?

Divide the rectangle into 2 parts

Divide 16 elements on the two parts

Number of elements in each part =

Then half of 16 equal 8



Half of 16 equal $16 \div 2 =$

Practice 9

Divide 24 counters into eighths. How many counters would be in each fractional unit?

Divide the rectangle into _____ parts

Distribute _____ element in each part

Number of element in each part

Then eighth of 24 equal



$$24 \div \quad =$$

Practice 10

Using divide find the following as in (a)

What is $\frac{1}{2}$ of 8?

Solution : $8 \div 2 = 4$

What is $\frac{1}{4}$ of 12?

Solution : $12 \div 4 = 3$

What is $\frac{1}{2}$ of 10?

Solution : $10 \div 2 = 5$

What is $\frac{1}{3}$ of 6?

Solution : $6 \div 3 = 2$

What is $\frac{1}{5}$ of 20?

Solution : $20 \div 5 = 4$

What is $\frac{1}{7}$ of 14?

Solution : $14 \div 7 = 2$

Self-check on lesson (11, 10)

1 Complete as in () :

a $1 = \frac{\quad}{2}$ Solution : $1 = \frac{2}{2}$

b $1 = \frac{\quad}{10}$ also $1 = \frac{8}{\quad}$

c $1 = \frac{\quad}{6}$ also $1 = \frac{\quad}{9}$

d $1 = \frac{\quad}{12}$ also $1 = \frac{\quad}{5}$

e $1 = \frac{\quad}{7}$ also $1 = \frac{11}{\quad}$

2 Complete :

What is $\frac{\quad}{\quad}$ of 4 ? Solution : $4 \div \quad = \quad$

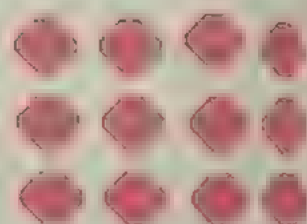
What is $\frac{\quad}{\quad}$ of 16 ? Solution : $16 \div \quad = \quad$

What is $\frac{\quad}{\quad}$ of 33 ? Solution : $33 \div \quad = \quad$

3 From the array below write the fraction that expresses the element and the fraction that represent all array :

The fraction that expresses the element =

The fraction that expresses all array =

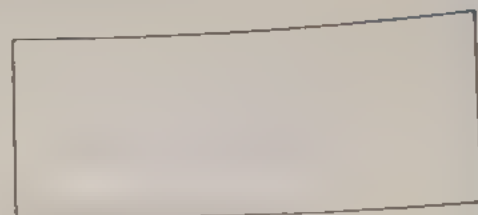




Divide the opposite rectangle into equal parts ,

Number of parts

The fraction represent each part



Divide the opposite rectangle into equal parts ,

Number of parts

The fraction represent each part



What is a third of :



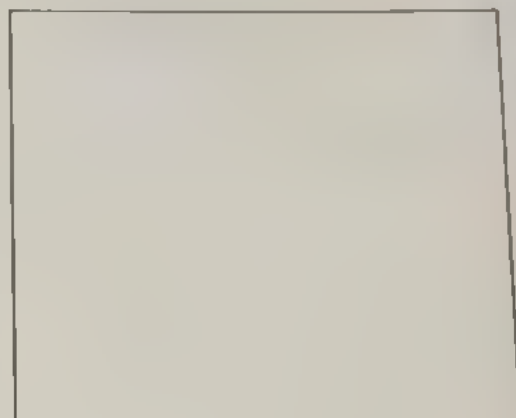
Divide the rectangle into parts.

Distribute 21 on the parts equally.

Then the number of each part =



: =



What is the fourth of :



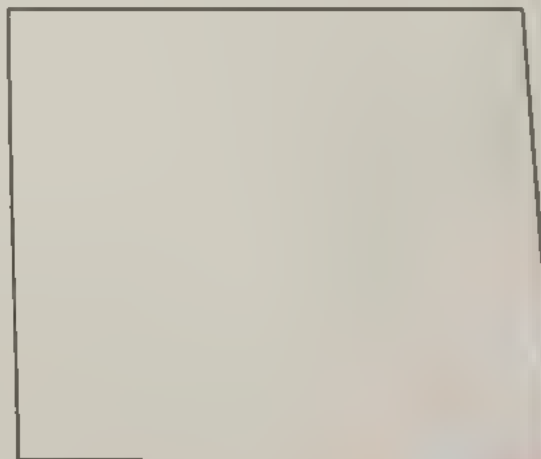
Divide the rectangle into parts.

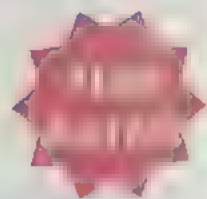
Distribute 20 on the parts equally.

Then the number of each part =



÷ =





Activity 1 Menamed has 12 apples to distribute them equally to his friends . Complete

1 If he splits the apples equally between 2 friends

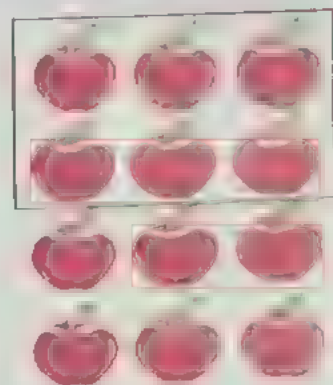
Solution

Divide the apples on the friends

$$12 \div 2 = 6 \text{ Apples}$$

So Number of apples for each one = 6 ,

The fraction that expresses the share of each one = $\frac{6}{12}$



2 If he distribute the apples equally between 3 friends :

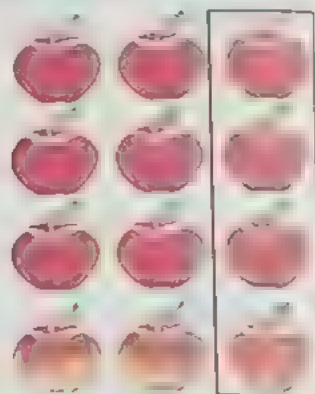
Solution

Divide the apples on the friends

$$\div \dots = \dots \text{ Apples}$$

So Number of apples for each one =

The fraction that expresses the share of each one =



3 If he distribute the apples equally between 4 friends .

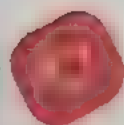
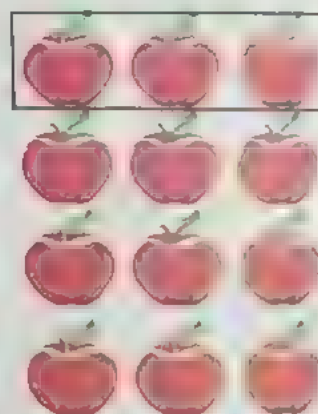
Solution

Divide the apples on the friends

$$\div \dots = \dots \text{ apples}$$

So Number of apples for each one =

The fraction that expresses the share of each one =





Divide 6 pack of soda equally on 6 guests.
How many cans of soda will each guest receives
write as a division problem and as a fraction.



Divide on
= pack

So Number of pack for each one

The fraction of share =



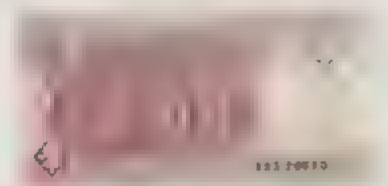
A father divide 24 pounds on his 3 sons.
What is the number of pounds for each son.
What is the fraction for the part ?



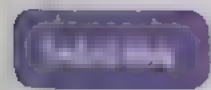
Divide on
 \div = pounds

So Number of pound for each one =

The fraction that represent the share of each one =



A teacher split 15 notebook on 5 children .
How many notes for each one ? Write the
fraction that represent the share of each one.



Divide on
 \div = notes

So Number of notes for each child =

The fraction =



Practice

Heba and Amira walk to school together. It takes Heba $\frac{1}{2}$ an hour to walk to Amira's house. It takes Heba and Amira $\frac{1}{4}$ of an hour to walk to school together. How many minutes in all does Heba take to walk to the school?

Solve

$$\frac{1}{2} \text{ hour} = \quad \text{minutes}$$

$$\frac{1}{4} \text{ hour} = \quad \text{minutes}$$

$$\text{Time of Heba} = \frac{1}{2} \text{ hour} + \frac{1}{4} \text{ hour}$$

$$= \quad \text{minutes} + \quad \text{minutes} = \quad \text{minutes}$$

Practice

Circle the greater fraction :

$$\frac{1}{3}, \frac{1}{4}$$

$$\frac{1}{5}, \frac{1}{8}$$

$$\frac{1}{2}, \frac{1}{4}$$

$$\frac{1}{7}, \frac{1}{9}$$

$$\frac{1}{6}, \frac{1}{8}$$

$$\frac{1}{6}, \frac{1}{5}$$

$$\frac{1}{4}, \frac{1}{6}$$

$$\frac{1}{9}, \frac{1}{10}$$

Practice

Arrange from the small to the big :

$$\frac{1}{2}, \frac{1}{8}, \frac{1}{4}, \frac{1}{3}$$

The fraction that has greater denominator is the smaller

Solution

The order : , , ,

Practice

Complete as in () :

2 fourth form $\frac{1}{2}$

$\frac{1}{2}$		$\frac{1}{2}$	
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

Divide each part into () parts

Sixth form $\frac{1}{3}$

$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Eighths form $\frac{1}{4}$

$\frac{1}{4}$			

Tenths form $\frac{1}{5}$

Practice

Using division to find as in (a) :

How much is a fourth of 4 ?

Solution : $4 \div 4 =$

How much is eighth of 16 ?

Solution : $16 \div 8 =$

How much is half of 20 ?

Solution : $20 \div 2 =$

How much is third of 6 ?

Solution : $6 \div 3 =$

How much is fifth of 15 ?

Solution : $15 \div 5 =$

Self - check on lesson (79, 80)

1 Complete :

- How much is fifth of 20 ? Solution : $20 \div 5 =$
- How much is fourth of 12 ? Solution : $12 \div 4 =$
- How much is third of 18 ? Solution : $18 \div 3 =$
- How much is half of 14 ? Solution : $14 \div 2 =$
- How much is ninth of 36 ? Solution : $36 \div 9 =$

Remember that

The fraction that has greater denominator is the smaller

2 Arrange the following .

- In an ascending order : $\frac{1}{6}$, $\frac{1}{10}$, $\frac{1}{2}$, $\frac{1}{5}$

The order : , , ,

- In a descending order : $\frac{1}{3}$, $\frac{1}{12}$, $\frac{1}{7}$, $\frac{1}{9}$

The order : , , , , , ,

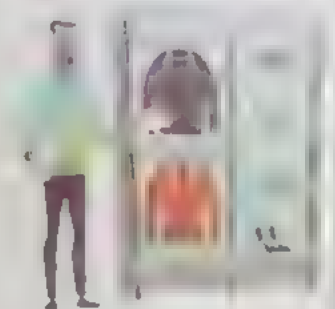
- 3 A company distributed 30 uniforms () equally among ten employees. How many uniforms does each employee take ? What is the fraction that represents that ?

Divide on

So $\div =$ Uniforms

Number of uniforms for each one =

The fraction =

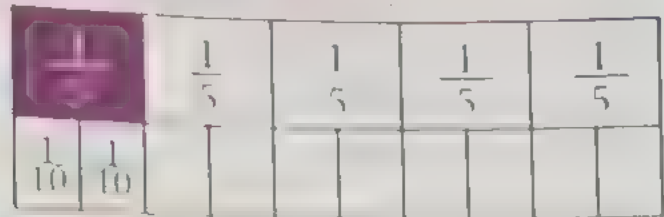


Remember this

We divide the number of all parts by the denominator

4 Complete

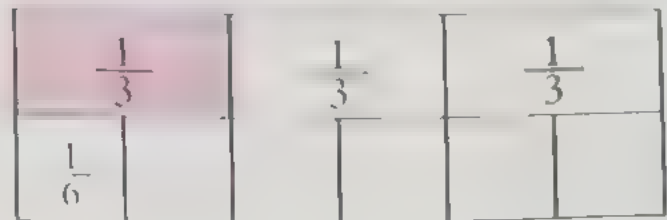
a $\frac{1}{5}$ has tenths



b $\frac{1}{2}$ has eighths



c $\frac{1}{3}$ has sixths



5 Complete as in (a).

If $\frac{1}{2}$ a bag of biscuit equal 5 pieces

Then number of pieces = $2 \times 5 = 10$ pieces.



If $\frac{1}{4}$ a bag of balloons equal 4 balloons

Then number of all balloons = $4 \times$ = balloons

If $\frac{1}{3}$ a box of mineral water equal 3 bottles

Then number of bottles in a box = $3 \times$ = bottles



If $\frac{1}{5}$ of wax in the box equal 6 wax

Then number of wax in the box = $5 \times$ = wax

If $\frac{1}{7}$ of kilogram of tomatoes = 3 pieces

Then A kilogram of tomatoes = $7 \times$ = pieces



1 Complete using ($>$, $=$, $<$):

$\frac{1}{3}$ $\frac{1}{4}$

$\frac{1}{5}$ $\frac{1}{5}$

$\frac{1}{8}$ $\frac{1}{7}$

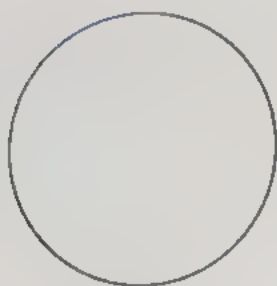
$\frac{1}{2}$ $\frac{1}{10}$

Half of 6 $\frac{1}{3}$ Third of 9

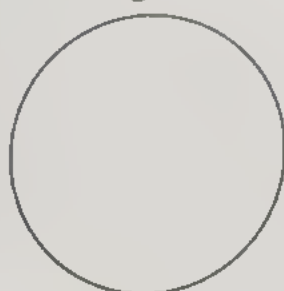
Fourth of 8 $\frac{1}{5}$ Fifth of 5

2 Divide then shade what expresses the fraction .

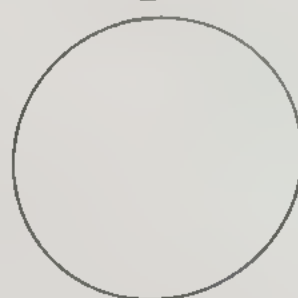
$\frac{1}{4}$



$\frac{1}{3}$



$\frac{1}{2}$



3 A family with 5 members expresses the member as a fraction and then the whole family expressed it as a fraction :

The fraction for member is $\frac{1}{5}$

The fraction for the family is $\frac{5}{5}$

If two of them go to school, then :

The fraction for the left members in the Family is $\frac{3}{5}$

4 Choose the correct answer .

a Half the number (12) =

($\frac{1}{2}$, 14 , 6 , 10)

b Fourth the number (40) =

(... , — , 10 , 4)

c $1 = \frac{\quad}{5}$

(2 , 3 , 4 , 5)

d The numerator of $\frac{5}{6}$ is

(... , 6 , 5 , ...)

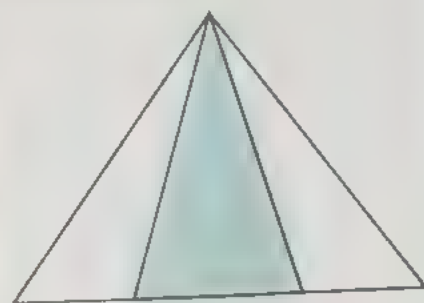
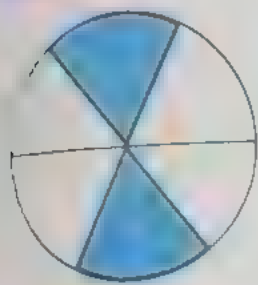
e Whole one has Fifths

(... , 5 , ... , ...)

f The number of fourth in ($\frac{1}{2}$) is

(... , 4 , ... , 6)

5 Write the fraction that represent the coloured part :



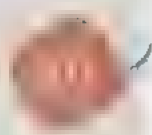
6 Answer the following :

** If $\frac{1}{6}$ a box of pens equal 2 pens

Then the number of pens in the box = $6 \times \quad = \quad$ pens

** If we divide this pens on 4 friends equally

Then the share of each one = $\dots \div 4 = \dots$ pens .



1 Complete :

a $13 \times 5 = (10 + \quad) \times 5$
 $= (\quad \times \quad) + (\quad \times 5)$
 $= \quad + \quad =$

b The number of hours in one day = \quad hours

c Fourth of the number 20 = \quad

d The area of a rectangle whose dimensions 5 cm , 10 cm = \quad

e 3 thirds = \quad , Five fifths = \quad

2 Choose the correct answer :

a $4 \times 9 \times 8 = (4 \times \quad) \times 9$ (4 , 9 , 5 , 8)

b Half of the number 10 equal ($\frac{1}{2}$, 10 , 5 , 1)

c $(9 + 3) \div \quad = 3$ (3 , 4 , 9 , 8)

d The perimeter of a square whose side 8 cm equal \quad cm

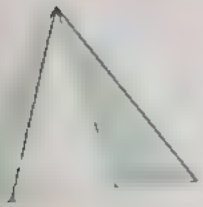
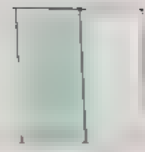
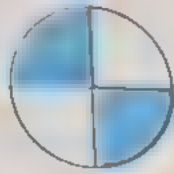
(64 , 32 , 8 , 4)

e 2 hours = \quad minutes . (30 , 60 , 120 , 150)

f $3 \times 27 = 3 \times (\quad + 7)$ (10 , 20 , 30 , 40)

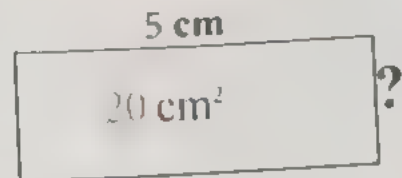


3 Compare using ($<$, $>$, $=$):



4 If the area of rectangle is 20 cm^2 and it's length 5 cm calculate it's width .

The width = The area \div The length
 $= \quad \div \quad = \quad \text{cm}$



5 Answer the following :

Arrange in a descending order : $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{10}$, $\frac{1}{8}$, $\frac{1}{4}$

The order :

Complete the pattern . $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{7}$, $\frac{1}{8}$, $\frac{1}{9}$, $\frac{1}{10}$

6 Answer the following :

.. If $\frac{1}{5}$ of the number of bisects 4 pieces .

Then the number of all pieces = pieces .

.. And if we divide this pieces on 2 friends equally .

Then the share of each one = $20 \div \quad = \quad$ pieces .

For more applications and activities, enjoy with Bakkar Nondini



Chapter Three



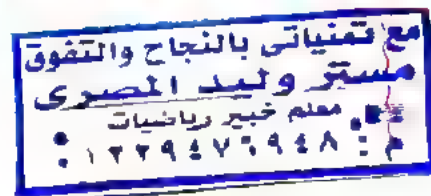
Vocabulary

Eighths	أثمان	Greater than	أكبر من
Equal parts	أجزاء متساوية	Less than	أقل من
Fourths	أرباع	Key	مفتاح
Fraction	كسر	Line plot	خط النقاط
Fractional part	أجزاء كسرية	Proper fraction	الكسر الحقيقي
Halves	أنصاف	Hypothesis	افتراض
Number line	خط الأعداد	Common	مشارك (متشابه)
Sixths	أسداس	Add	اجمع
Thirds	أثلاث	Sum	مجموع
Denominator	المقام	Difference	فرق
Unit fraction	وحدة الكسر	Subtract	اطرح
Whole 1	واحد صحيح	Compare	قارن

Content



Exercise
inspired from
Discover

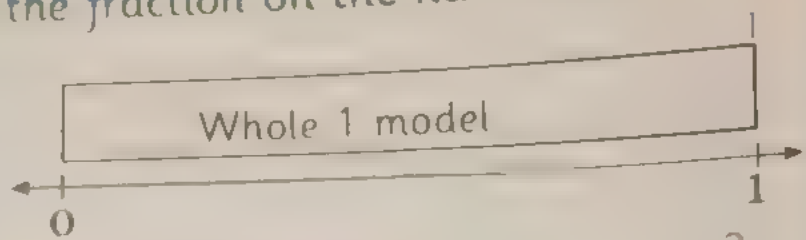


Lesson (81 , 82 , 83)

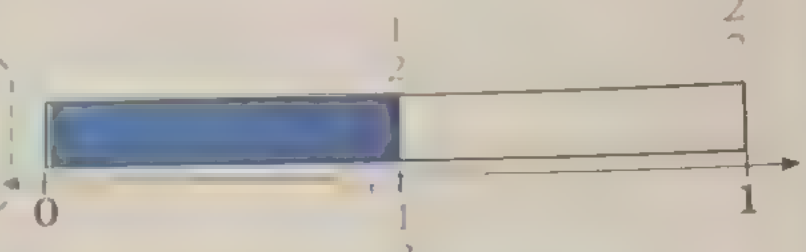
Fraction on the number line

1 Representing the fraction on the number line :

Draw a line then put the one whole strip then mark and



Draw a line under the fraction model then mark and



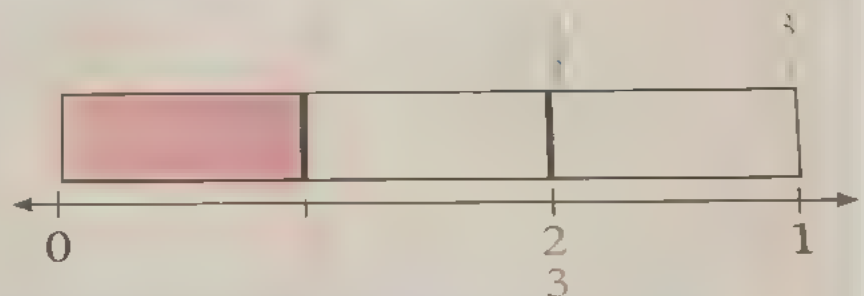
Notice : $\frac{1}{2}$ is the same as whole 1 then $1 =$

Draw a line under the fraction model then mark



Notice : $\frac{1}{3}$ is the same as whole 1 then $1 =$

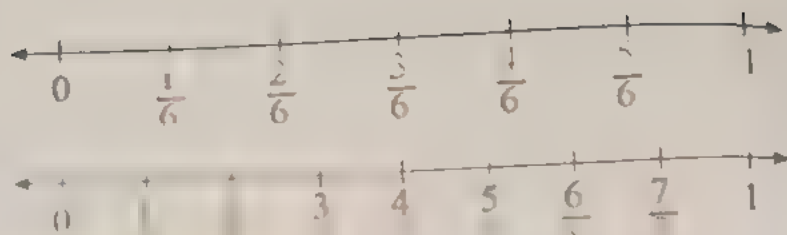
Draw a line under the fraction model then mark



Notice : $\frac{2}{3}$ is the same as whole 1 then $1 = \frac{3}{3}$

From the above we find that $1 = \frac{1}{1} = \frac{2}{2} = \frac{3}{3}$

- Repeat the next with $\frac{1}{6}$ model and $\frac{1}{6}$ model
we get the opposite line :



Also $\frac{1}{6}$ also $\frac{1}{6}$

Also $\frac{1}{3}$ also $\frac{1}{3}$

Practice 1 Draw a line matching each story to its number line

Story problems

Number line model

1. A had a rope. She needed $\frac{1}{2}$ of it for a project.



2. Omar had a meter of wood. He needed $\frac{1}{3}$ of the meter for a bird house.



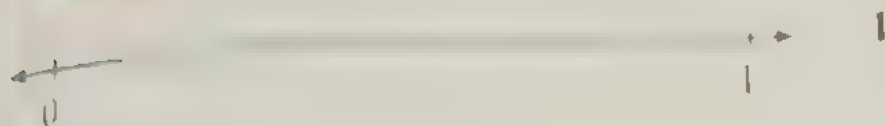
3. Sara was sewing beads onto a meter of ribbon. She wanted to sew a bead on each $\frac{1}{4}$ of the ribbon.

4. At the park, there was a straight 1-kilometre path. Every $\frac{1}{6}$ of the path, there was a drinking fountain.



Practice

Ali needs to wrap presents. He lays the ribbon flat and says: "If I make 5 equally pieces, I will have just enough pieces. I can use 1 piece for each present." Draw a number line to show Ali's ribbon and the parts he will make:



How many presents can Ali wrap?

What fraction of the whole ribbon is used for each present?

Practice

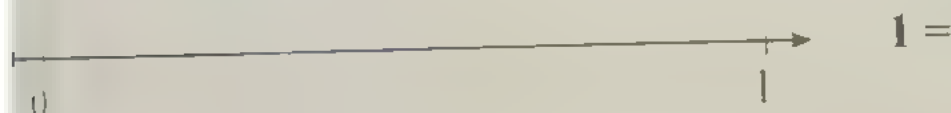
Mariam is planting flowers in her 1 meter long rectangular plant box. She divides the plant box into sections $\frac{1}{4}$ of a meter in length. Then she plants 1 seed in each section. Draw and label a number line representing the plant box from 0 meters to 1 meter.



How many seeds can Mariam plant?

Practice

Zaid wanted to cut a 1 meter piece of rope into equal pieces for his 4 friends. Draw a number line to show how he could cut the rope.



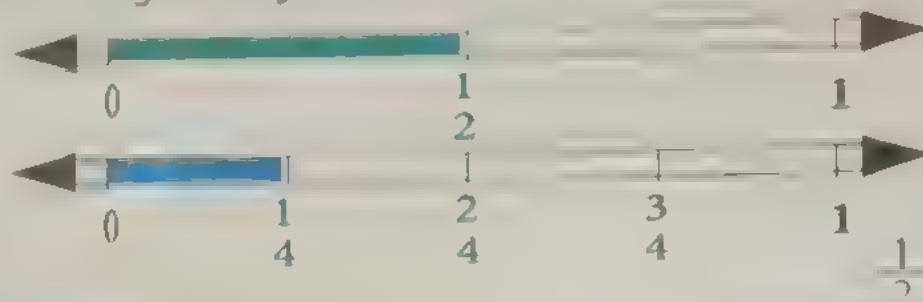
Which fraction of the rope each friend will get?



Activity 2 Compare between $\frac{1}{2}$ and $\frac{1}{4}$ on the number line :

- Draw number lines divide each line as a fraction and colour it with different colour .
- Compare the parts of each fraction .
- The longer is the greater fraction .

$$1 = \frac{2}{2} = \frac{4}{4}$$



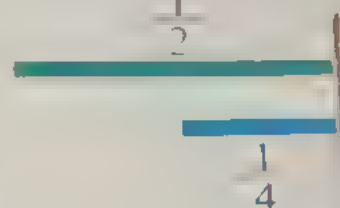
The green part
represent $\frac{1}{2}$

**Longer
than**

The blue part
represent $\frac{1}{4}$

So

$$\frac{1}{2} > \frac{1}{4}$$

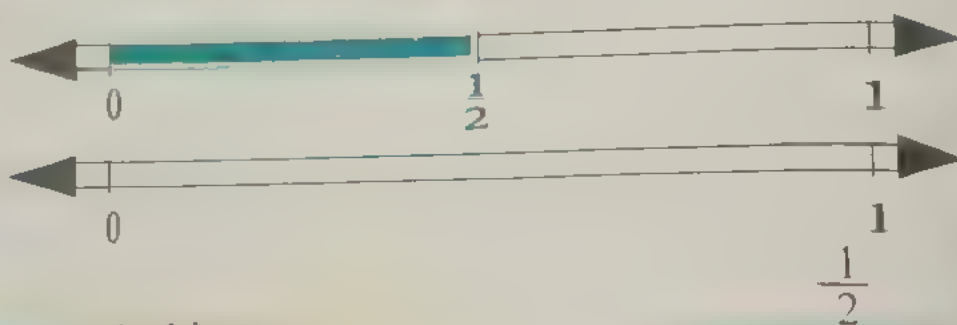


Practice 2

Compare between $\frac{1}{2}$ and $\frac{1}{3}$ on the number line:

- Divide the number line as the fraction $\frac{1}{3}$ and Colour with blue .

$$1 = \frac{2}{2} = \frac{3}{3}$$



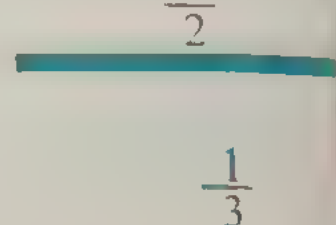
The green part
represent $\frac{1}{2}$

**Longer
than**

The blue part
represent $\frac{1}{3}$

So

$$\frac{1}{2} > \frac{1}{3}$$

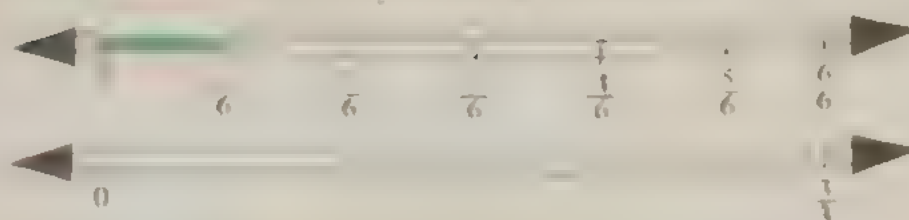


The larger denominator means less fraction



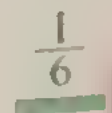
Compare between $\frac{1}{6}$ and $\frac{1}{3}$ on the number line:

$$1 = \frac{6}{6} = \frac{2}{2}$$



The $\frac{1}{6}$ part is **Longer than** the $\frac{1}{3}$ part.

So $\frac{1}{6} > \frac{1}{3}$

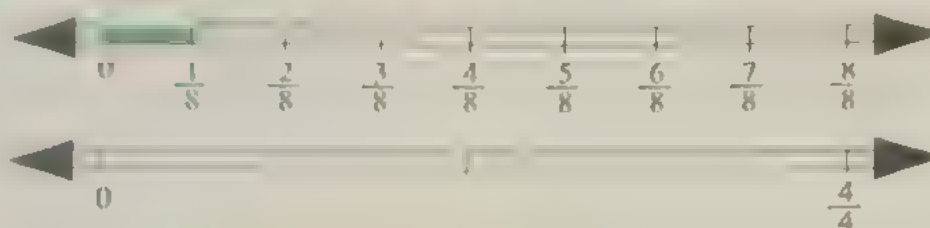


$$\frac{1}{3}$$



Compare between $\frac{1}{8}$ and $\frac{1}{4}$ on the number line:

$$1 = \frac{8}{8} = \frac{2}{2}$$



The $\frac{1}{8}$ part is **Longer than** the $\frac{1}{4}$ part.

So $\frac{1}{8} > \frac{1}{4}$



$$\frac{1}{4}$$



Compare between $\frac{1}{8}$ and $\frac{1}{6}$ on the number line:

$$1 = \frac{8}{8} = \frac{6}{6}$$



The $\frac{1}{8}$ part is **Longer than** the $\frac{1}{6}$ part.

So $\frac{1}{8} > \frac{1}{6}$

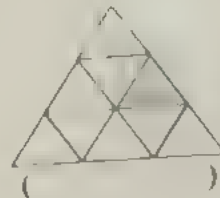
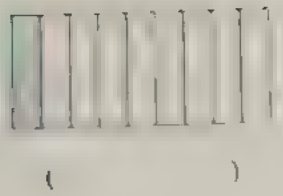
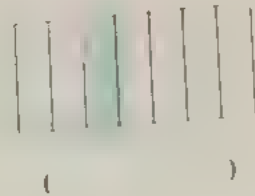
$$\frac{1}{8}$$

$$\frac{1}{6}$$



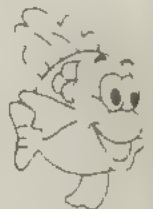
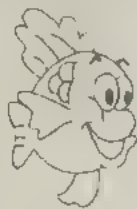
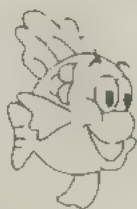
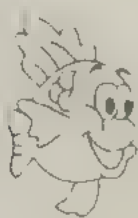
Self-check on lesson (11, 12, 13)

1 Write the fraction according to the coloured part:



2 Circle according to the fraction:

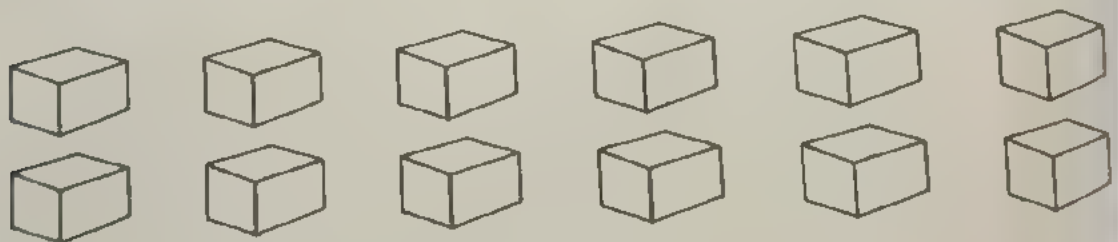
$$\frac{1}{6}$$



$$\frac{1}{5}$$

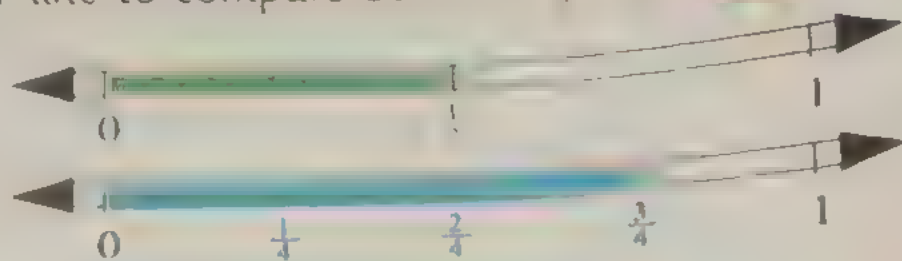


$$\frac{1}{3}$$



3 Use the number line to compare between $\frac{3}{4}$, $\frac{1}{2}$

1 = $\frac{4}{4}$ = $\frac{2}{2}$



The length of the bar
represent $\frac{1}{2}$

Longer
than

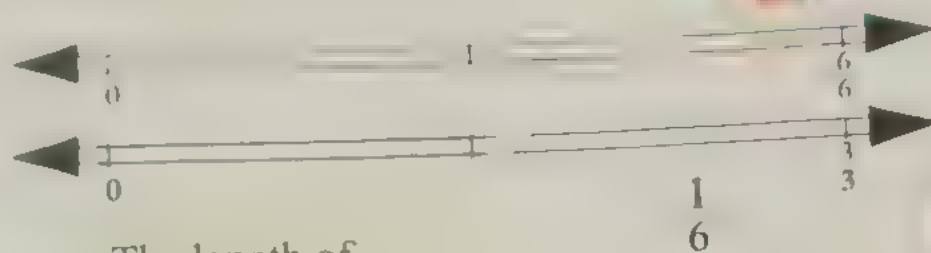
The length of the
represent $\frac{3}{4}$

Then

$\frac{1}{2} < \frac{3}{4}$

4 Use the number line to compare between $\frac{1}{6}$, $\frac{1}{3}$

1 = $\frac{6}{6}$ = $\frac{3}{3}$



The length of
represent $\frac{1}{6}$

Longer
than

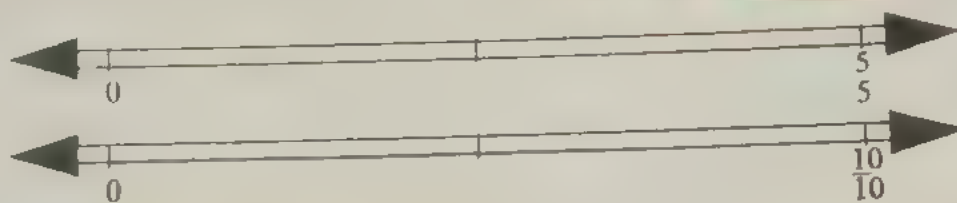
The length of
represent $\frac{1}{3}$

Then

$\frac{1}{6} < \frac{1}{3}$

5 Use the number line to compare between $\frac{1}{5}$, $\frac{1}{10}$

1 = $\frac{10}{10}$ = $\frac{2}{2}$



The length of

Represent $\frac{1}{5}$

Longer
than

The length of

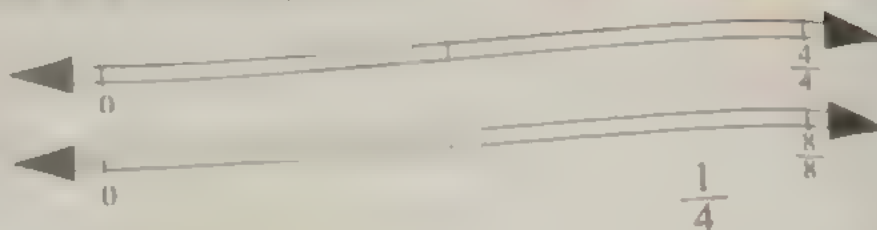
Represent $\frac{1}{10}$

Then

$\frac{1}{5} > \frac{1}{10}$

6 Use the number line to compare between $\frac{1}{4}$ and $\frac{1}{8}$

$$1 = \frac{4}{4} = \frac{8}{8}$$



The length of

represent —

Less
than

The length of

represent —

$\frac{1}{4}$

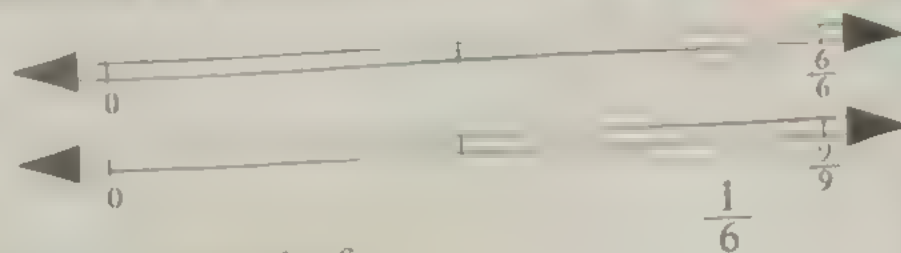
$\frac{1}{8}$

Then

— < —

7 Use the number line to compare between $\frac{1}{6}$ and $\frac{1}{9}$

$$1 = \frac{6}{6} = \frac{9}{9}$$



The length of

represent —

Less
than

The length of

represent —

$\frac{1}{6}$

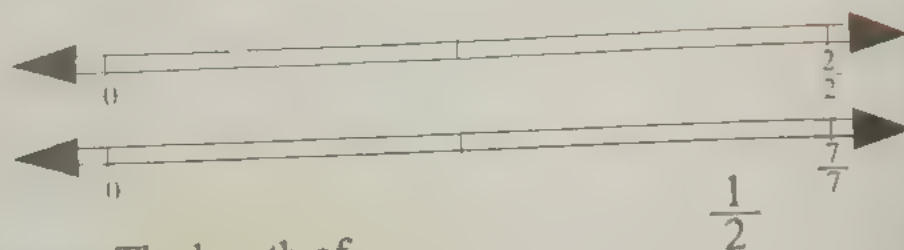
$\frac{1}{9}$

Then

— < —

8 Use the number line to compare between $\frac{1}{2}$ and $\frac{1}{7}$

$$1 = \frac{7}{7} = \frac{7}{7}$$



The length of

represent —

Less
than

The length of

represent —

$\frac{1}{2}$

$\frac{1}{7}$

Then

— < —

Comparing common fraction

- Activity 1** The proper fraction :
It's numerator less than it's denominator :

The fraction $\frac{3}{4}$

3 → Numerator (The number of parts we have)

4 → Denominator (The number of parts in one)

The fraction read as : Three fourths

- Activity 2** Write the fraction that express the number of ants:

Numerator (number of ants) → $\frac{3}{4}$

Denominator (All number) →



- Activity 3** Write the fraction that express the number of girls:

$\frac{3}{4}$



- Activity 4** Write the fraction that express the number of yellow apples:

$\frac{4}{8}$



Practice 3

Complete as in (a) :

The fraction $\frac{3}{5}$, It's numerator 3, It's denominator 5

The fraction $\frac{1}{7}$, It's numerator, It's denominator

The fraction $\frac{4}{9}$, It's numerator, It's denominator

Practice 4

Complete as in (a) :

Three different fractions with a denominator of 6 each $\frac{1}{6}$, $\frac{2}{6}$, $\frac{5}{6}$

Three different fractions with a denominator of 10 each. , ,

Three different fractions with a denominator of 7 each. , ,

Practice 5

Write the fractions as in (a) :

a Five eighths = $\frac{5}{8}$

b Three sevenths = —

c Fourth = —

d Two fifths = —

e Two sixths = —

f Three fourths = —

g Five tenths = —

h Nine ninths = —

i Three sixths = —

j Two halves = —

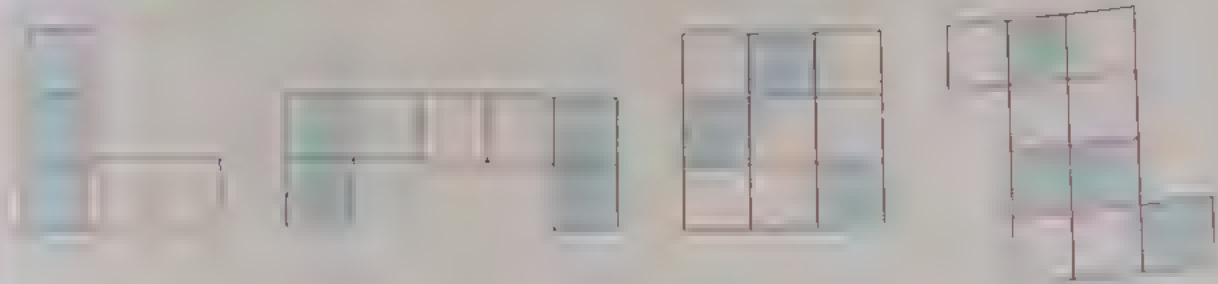
k Five sevenths = —

l Seven eighths = —



Exercise 5

Write the fraction according to the coloured parts as the Ex.



$$\frac{3}{5}$$

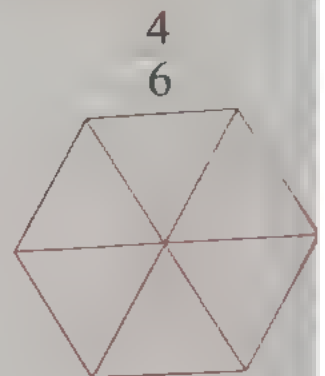
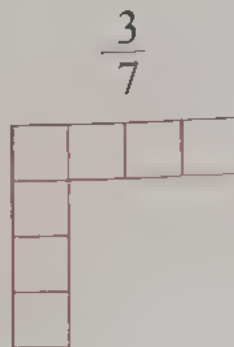
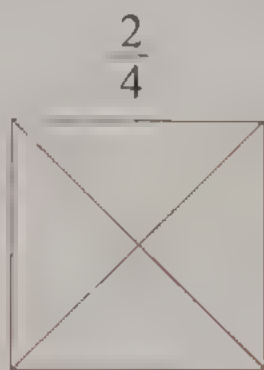
$$=$$

$$=$$

$$=$$

Exercise 7

Colour according to the fraction as the Ex :



Exercise 10

Write the fractions in words as in (a) :

$\frac{3}{7} =$ Three sevenths .

$\frac{1}{4} =$.

$\frac{5}{5} =$.

$\frac{4}{9} =$.

$\frac{1}{6} =$.

$\frac{7}{8} =$.

$\frac{5}{7} =$.

$\frac{2}{3} =$.

Activity 3 Compare between the two fractions $\frac{3}{4}$, $\frac{2}{4}$ using shapes:



$$\frac{3}{4}$$



$$\frac{2}{4}$$

So $\frac{3}{4} > \frac{2}{4}$

Practice 9

Compare between the two fractions $\frac{5}{8}$, $\frac{4}{8}$ using shapes:



$$\frac{5}{8}$$



$$\frac{4}{8}$$

So $\frac{5}{8} > \frac{4}{8}$

Practice 10

Compare between the two fractions $\frac{2}{3}$, $\frac{1}{3}$ using shapes:



$$\frac{2}{3}$$



$$\frac{1}{3}$$

So $\frac{2}{3} > \frac{1}{3}$

Notice

When comparing two fractions with equal denominators, we look at the numerator of each fraction:

So the fraction that has the largest numerator is the largest fraction. $\frac{4}{6} > \frac{1}{6}$, $\frac{5}{9} < \frac{7}{9}$, $\frac{3}{4} > \frac{1}{4}$.

Practice 11

Notice compare using ($<$, $>$):

$$\frac{7}{9} \dots \frac{6}{9}, \frac{5}{8} \dots \frac{3}{8}, \frac{2}{4} \dots \frac{3}{4}, \frac{1}{2} \dots \frac{2}{2}$$

Activities from Math Journal

Activity

Write the fraction according to the number of equal parts as the Ex :

Fourths



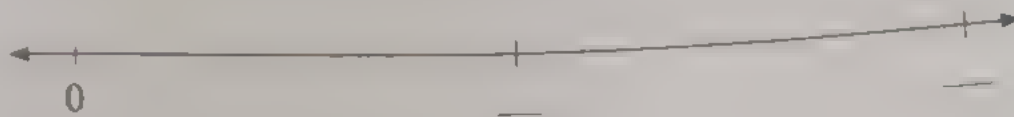
Thirds



Eighths



Halves



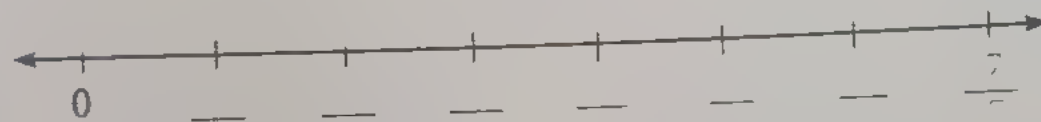
Sixths



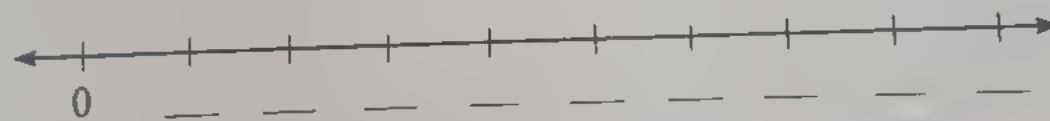
Fifths



Sevenths



Ninths

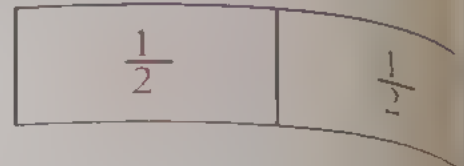


Note : Counting ascendingly on the number line

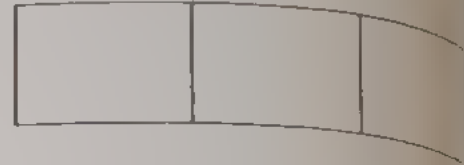
Self-check on lesson (84, 85, 86)

1 Use the shapes to answer as in (a) :

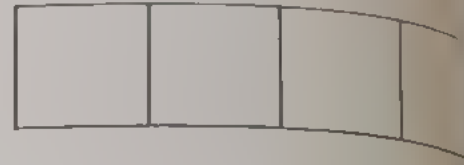
a How many halves are in one? $\frac{2}{2}$



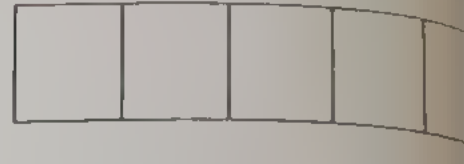
b How many thirds are in one?



c How many fourths are in one?



d How many fifths are in one?




e How many sixths are in one?





f How many sevenths are in one?



2 Circle the smaller fraction :


 $\frac{1}{3}$, $\frac{2}{3}$


 $\frac{4}{5}$, 1

 $\frac{9}{34}$, $\frac{3}{34}$


 $\frac{5}{16}$, $\frac{11}{16}$

 $\frac{7}{9}$, $\frac{8}{9}$

 $\frac{2}{4}$, $\frac{1}{4}$

 $\frac{1}{2}$, $\frac{2}{2}$

 $\frac{9}{10}$, $\frac{5}{10}$

 1 , $\frac{3}{7}$



3 Write the fraction that represents the firefighter :



4 Write the fraction that represents the bags :



5 Write the fraction that represents the tractors :



6 Complete as the example :

Four fifths = $\frac{4}{5}$ Three sevenths = $\frac{3}{7}$ Four fourths = $\frac{4}{4}$

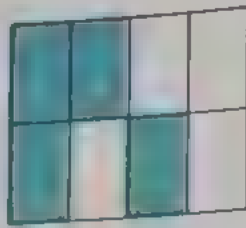
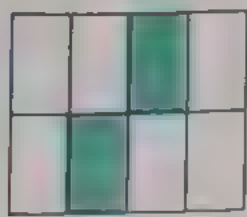
Seven eighths = $\frac{7}{8}$ Five tenths = $\frac{5}{10}$ Four sixths = $\frac{4}{6}$

Two halves = $\frac{2}{2}$ Four eighths = $\frac{4}{8}$ Three fifths = $\frac{3}{5}$

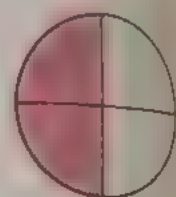
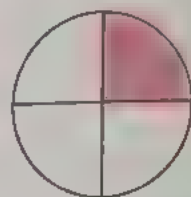
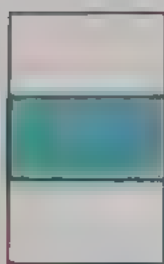
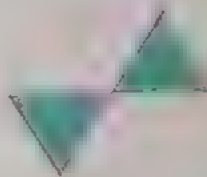
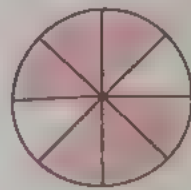
Six sixths = $\frac{6}{6}$ Half = $\frac{1}{2}$ Six ninths = $\frac{6}{9}$



7 Notice write the fraction then compare as in (a) :



$$\frac{2}{8} < \frac{4}{8}$$



8 Correct that between brackets as in (a) :

a The fraction $\frac{5}{7}$ its denominator is (5) (7)

b Seven eighths is ($\frac{7}{9}$). (.....)

c Whole one = ($\frac{4}{9}$). (.....)

d Five sixths = ($\frac{6}{5}$). (.....)

Adding fractions

Comparing common fraction with the same denominator

Activity 1 Compare between $\frac{3}{5}$, $\frac{2}{5}$:

Notice :

Number of parts of $\frac{3}{5}$ more than number of parts of $\frac{2}{5}$

So $\frac{3}{5} > \frac{2}{5}$



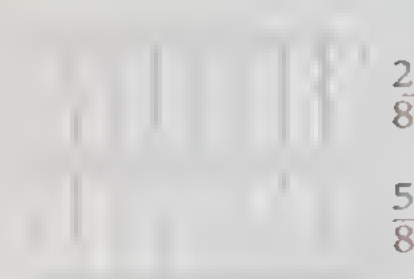
Remarks : When the denominators are equal the fraction with the smallest numerator is the smallest.

Practice 1 Compare between $\frac{5}{8}$, $\frac{2}{8}$:

Notice :

Number of parts of $\frac{5}{8}$ more than number of parts of $\frac{2}{8}$

So: The fraction $\frac{5}{8} > \frac{2}{8}$ The fraction



Practice 2 Compare between $\frac{3}{6}$, $\frac{4}{6}$:

Notice :

Number of parts of $\frac{3}{6}$ less than number of parts of $\frac{4}{6}$

So: The fraction $\frac{3}{6} < \frac{4}{6}$ The fraction



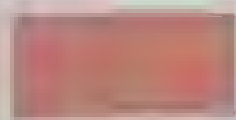
Comparing two unlike fraction with the same numerator

Activity 2 Compare between $\frac{2}{3}$, $\frac{2}{4}$:

Notice:

The length of $\frac{2}{3}$ parts are longer than the length of blue parts.

So: $\frac{2}{3} > \frac{2}{4}$

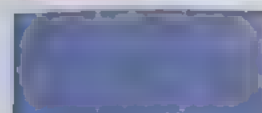
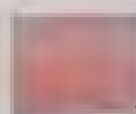


Practice 1 Compare between $\frac{3}{8}$, $\frac{3}{4}$:

Notice :

The length of $\frac{3}{8}$ parts are longer than the length of $\frac{3}{4}$ parts .

So $\frac{3}{8} > \frac{3}{4}$

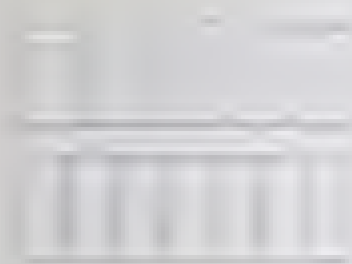


Practice 2 Compare between $\frac{4}{5}$, $\frac{4}{7}$:

Notice :

The length of $\frac{4}{5}$ parts are longer than the length of $\frac{4}{7}$ parts .

So $\frac{4}{5} > \frac{4}{7}$



Practice 3 Compare between $\frac{5}{5}$, $\frac{5}{6}$:

Notice :

The length of $\frac{5}{5}$ parts are longer than the length of $\frac{5}{6}$ parts .

So $\frac{5}{5} > \frac{5}{6}$



Remarks :

When the numerators are equal, the fraction with greater denominator is the smaller.

Circle the greater .

$\frac{3}{4} , \frac{2}{7}$

$\frac{2}{5} , \frac{4}{5}$

$\frac{1}{2} , \frac{1}{4}$

$\frac{5}{9} , \frac{7}{9}$

$\frac{4}{5} , \frac{4}{6}$

$1 , \frac{3}{8}$

Compare using ($<$, $=$, $>$) :

$\frac{1}{3} \square \frac{2}{3}$

$\frac{4}{7} \square \frac{1}{7}$

$\frac{1}{10} \square \frac{7}{10}$

$\frac{1}{6} \square \frac{2}{6}$

$1 \square \frac{1}{7}$

$\frac{1}{5} \square \frac{1}{8}$

$\frac{2}{6} \square \frac{2}{5}$

$\frac{3}{4} \square \frac{3}{9}$

Arrange the following fractions:

$\frac{1}{5} , \frac{3}{5} , \frac{5}{5} , \frac{2}{5} , \frac{4}{5}$

In an ascending order :

$\frac{2}{8} , \frac{7}{8} , \frac{1}{8} , \text{zero} , \frac{5}{8}$

In an ascending order :

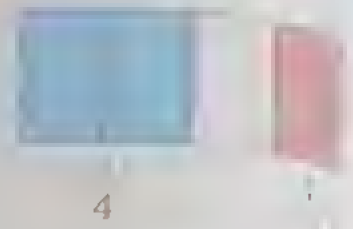
$\frac{1}{6} , 1 , \frac{4}{6} , \frac{5}{6} , \frac{3}{6}$

In a descending order :



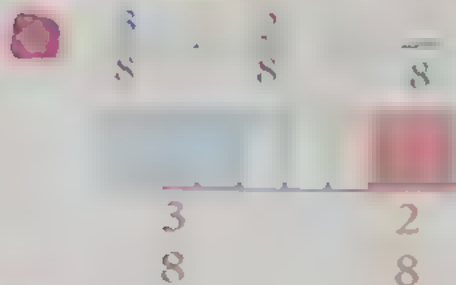
Activity 3 Using the models to add $\frac{2}{4} + \frac{1}{4}$:

Hint all denominators are the same
add the numbers of parts
 (Add the numerators only)



Then $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

Practise 1 Add using the model as in (c) :

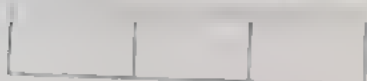


all denominators are like
 Add numerators only

Then $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

6 $\frac{1}{3} + \frac{1}{3} = \frac{\quad}{3}$

Add numerators only



4 $\frac{2}{7} + \frac{4}{7} = \frac{\quad}{7}$

Add numerators only



2 $\frac{2}{4} + \frac{2}{4} = \frac{\quad}{4}$

Add numerators only

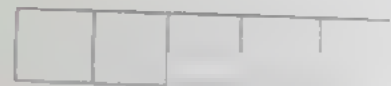
8 $\frac{1}{6} + \frac{3}{6} = \frac{\quad}{6}$

Add numerators only



5 $\frac{1}{5} + \frac{3}{5} = \frac{\quad}{5}$

** Add numerators only



3 $\frac{1}{3} + \frac{2}{3} = \frac{\quad}{3}$

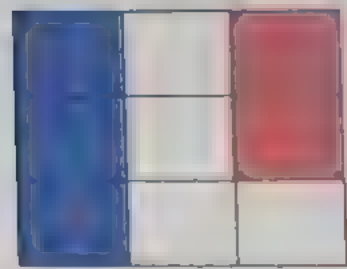
** Add numerators only

Activity 4 Complete as the Ex :

- The blue part represents = $\frac{3}{9}$

- The red part represents = $\frac{2}{9}$

The coloured parts = $\frac{3}{9} + \frac{2}{9} = \frac{5}{9}$

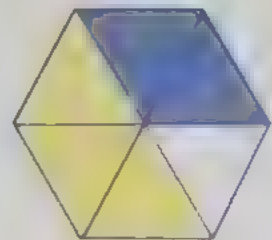


Practice 10 Complete :

a The purple part represents =

- The yellow part represents =

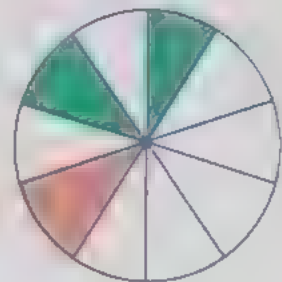
- The coloured parts = + =



b The green part represents =

- The orange part represents =

- The coloured parts = + =



Practice 11 Add :

a $\frac{2}{5} + \frac{1}{5} =$

c $\frac{1}{3} + \frac{1}{3} =$

e $\frac{1}{14} + \frac{8}{14} =$

g $\frac{5}{6} + \frac{1}{6} =$

b $\frac{1}{7} + \frac{4}{7} =$

d $\frac{3}{8} + \frac{2}{8} =$

f $\frac{9}{19} + \frac{2}{19} =$

h $\frac{3}{10} + \frac{7}{10} =$

Self-check on lesson (87, 88)

Put the suitable sign [$>$, $=$, $<$] :

$$\frac{3}{4} \quad \square \quad \frac{1}{4}$$

$$\frac{8}{9} \quad \square \quad 1$$

$$\frac{4}{5} \quad \square \quad \frac{1}{5}$$

$$\frac{4}{7} \quad \square \quad \frac{4}{8}$$

$$\frac{1}{5} \quad \square \quad \frac{1}{6}$$

$$\frac{3}{6} \quad \square \quad \frac{5}{6}$$

$$\frac{7}{10} \quad \square \quad \frac{7}{10}$$

$$\frac{7}{8} \quad \square \quad \frac{6}{8}$$

$$\frac{3}{10} \quad \square \quad \frac{3}{5}$$

$$1 \quad \square \quad \frac{2}{3}$$

Add :

$$\frac{3}{7} + \frac{2}{7} = \text{---}$$

$$\frac{2}{6} + \frac{1}{6} = \text{---}$$

$$\frac{3}{9} + \frac{5}{9} = \text{---}$$

$$\frac{3}{15} + \frac{3}{15} = \text{---}$$

$$\frac{0}{6} + \frac{2}{6} = \text{---}$$

$$\frac{6}{7} + \frac{1}{7} = \text{---}$$

$$\frac{1}{5} + \frac{3}{5} = \text{---}$$

$$\frac{2}{3} + \frac{1}{3} = \text{---}$$


$$\frac{7}{10} + \frac{1}{10} = \text{---}$$

$$\frac{2}{6} + \frac{2}{6} = \text{---}$$

$$\frac{5}{13} + \frac{7}{13} = \text{---}$$

$$\frac{31}{45} + \frac{4}{45} = \text{---}$$

3 Colour as the fraction then compare :

 $\frac{2}{3} \cdot \frac{2}{6}$



Notice:
The length of longer than the length of
Then >

 $\frac{3}{6} \cdot \frac{3}{8}$




Notice:
The length of longer than the length of
Then >

 Arrange the following fractions :

 $\frac{1}{2} \cdot \frac{1}{4} \cdot \frac{1}{3} \cdot 1$

In an ascending order :,, .., .., ..

 $\frac{1}{8} \cdot \frac{1}{6} \cdot \frac{1}{2} \cdot \text{Zero}$

In an ascending order :,, .., .., ..

 $\frac{1}{3} \cdot 1 \cdot \frac{1}{6} \cdot \frac{1}{9}$

In a descending order :,, .., .., ..

 $\frac{1}{4} \cdot 1 \cdot \frac{1}{7} \cdot \frac{1}{8}$

In a descending order :,, .., .., ..



5 Add using the model :

$$\frac{3}{8} + \frac{4}{8} = \frac{\quad}{8}$$

--	--	--	--	--	--	--	--

$$\frac{2}{3} + \frac{1}{3} = \frac{\quad}{3}$$

--	--	--

$$\frac{4}{7} + \frac{2}{7} = \frac{\quad}{7}$$

--	--	--	--	--	--

$$\frac{2}{4} + \frac{1}{4} = \frac{\quad}{4}$$

--	--	--	--

$$\frac{4}{9} + \frac{5}{9} = \frac{\quad}{9}$$

--	--	--	--	--	--

$$\frac{2}{5} + \frac{2}{5} = \frac{\quad}{5}$$

--	--	--	--	--

$$\frac{5}{9} + \frac{1}{9} = \frac{\quad}{9}$$

--	--	--	--	--	--

$$\frac{4}{6} + \frac{1}{6} = \frac{\quad}{6}$$

--	--	--	--	--

$$\frac{1}{5} + \frac{2}{5} = \frac{\quad}{5}$$

--	--	--	--

$$\frac{1}{2} + \frac{1}{2} = \frac{\quad}{2}$$

--	--

$$\frac{3}{8} + \frac{3}{8} = \frac{\quad}{8}$$

--	--	--	--	--	--

$$\frac{1}{7} + \frac{6}{7} = \frac{\quad}{7}$$

--	--	--	--	--	--

Subtracting like fractions

Activity 4 Subtract the two fractions $\frac{2}{4}$, $\frac{1}{4}$ using the model

Notice all denominators are like

Then subtract the number of parts

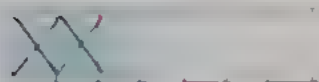
**** Subtract the numerators only**

So $\frac{2}{4} - \frac{1}{4} = \frac{1}{4}$



Practice 1 Draw model then subtract as in (a)

$\frac{3}{8} - \frac{2}{8} = \frac{\quad}{8}$



Notice all denominators are like

**** Subtract the numerators only**

So $\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$

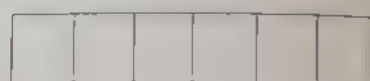
$\frac{2}{3} - \frac{1}{3} = \frac{\quad}{3}$

Subtract the numerators only



$\frac{5}{6} - \frac{2}{6} = \frac{\quad}{6}$

**** Subtract the numerators only**



$\frac{4}{7} - \frac{2}{7} = \frac{\quad}{7}$

Subtract the numerators only



$\frac{7}{10} - \frac{3}{10} = \frac{\quad}{10}$

**** Subtract the numerators only**



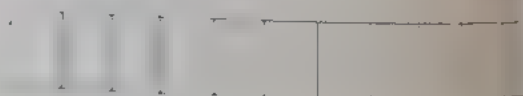
$\frac{7}{8} - \frac{3}{8} = \frac{\quad}{8}$

**** Subtract the numerators only**



$\frac{9}{11} - \frac{5}{11} = \frac{\quad}{11}$

**** Subtract the numerators only**



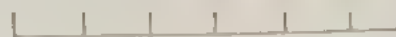


ate $\frac{1}{6}$ of his sandwich at snack time
and $\frac{2}{6}$ of his sandwich at lunch
How much of his sandwich did he eat in all?

Notice all denominators are like

Subtract the numerators only

$$\text{So } \frac{1}{6} + \frac{2}{6} = \frac{3}{6}$$



brought $\frac{1}{4}$ of a candy bar to
the playground. He gave $\frac{1}{4}$ of it to a friend.
How much does he have left?

Notice all denominators are like

**** Subtract the numerators only ****

$$\text{So } \frac{1}{4} - \frac{1}{4} = \frac{0}{4}$$



Maha and Nagi baked cakes that were the same size.
Maha gave $\frac{1}{3}$ of her cake to her class. Nagi gave
 $\frac{1}{4}$ of his cake to his class. Which class received
more cake, Maha's class or Nagi's class?

Notice all denominators are unlike

(compare between the length of the two colours)

Then $\frac{1}{3} > \frac{1}{4}$

Then class takes the largest amount



The juice at the container was $\frac{5}{6}$ full. I drank
 $\frac{5}{6}$ of the container. How much juice was left in the container?

Notice all denominators are like

**** Subtract the numerators only ****

$$\text{The reminder} = \frac{5}{6} - \frac{5}{6} = \frac{0}{6}$$



Practice 6

Yesterday, Marwan ran $\frac{2}{8}$ of a kilometre and then stopped to drink some water. After his break, he ran another $\frac{2}{8}$ of a kilometre. What fraction of a kilometre did Marwan run yesterday?

Adding the numerators only

Then $\frac{2}{8} + \frac{2}{8} = \frac{4}{8}$



Practice 7

Ali's house is $\frac{1}{3}$ of a kilometre from school.
 Sam's house is $\frac{2}{3}$ of a kilometre from school.
 Who lives closest to school?

Note: All the denominators are the same
 (Compare the two numerators)

The fraction $\frac{1}{3} > \frac{2}{3}$ The fraction
 Home of Ali is closer to school



Activity 5 Read then complete as in (a) :

$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$ Then $\frac{5}{7} - \frac{2}{7} = \frac{3}{7}$, $\frac{5}{7} - \frac{3}{7} = \frac{2}{7}$


$\frac{5}{8} + \frac{2}{8} = \frac{7}{8}$ Then $\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$, $\frac{7}{8} - \frac{5}{8} = \frac{2}{8}$

$\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$ Then $\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$, $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

$\frac{2}{9} + \frac{6}{9} = \frac{8}{9}$ Then $\frac{8}{9} - \frac{2}{9} = \frac{6}{9}$, $\frac{8}{9} - \frac{6}{9} = \frac{2}{9}$

$\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$ Then $\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$, $\frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

Self check on lesson (89, 90)

 Subtract. Draw a model to show your work as in (c)

 $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$


** Subtract the numerator only.



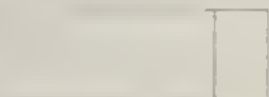
 $\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$

** Subtract the numerator only.



 $\frac{4}{7} - \frac{2}{7} = \frac{2}{7}$

** Subtract the numerator only.



 $\frac{3}{4} - \frac{1}{4} = \frac{2}{4}$


** Subtract the numerator only.



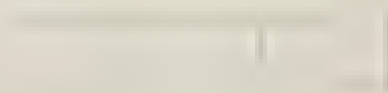
 $\frac{5}{8} - \frac{3}{8} = \frac{2}{8}$


** Subtract the numerator only.



 $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$


** Subtract the numerator only.



 $\frac{5}{8} - \frac{3}{8} = \frac{2}{8}$


** Subtract the numerator only.



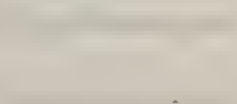
 $\frac{2}{2} - \frac{1}{2} = \frac{1}{2}$

** Subtract the numerator only.



 $\frac{3}{6} - \frac{2}{6} = \frac{1}{6}$

** Subtract the numerator only.



 $1 - \frac{3}{5} = \frac{2}{5}$

** Subtract the numerator only.




2 Subtract :

a $\frac{7}{8} - \frac{5}{8}$

c $\frac{3}{5} - \frac{1}{5}$

e $\frac{15}{15} - \frac{7}{15}$

g $\frac{7}{9} - \frac{4}{9}$

i $\frac{2}{3} - \frac{1}{3} =$

b $\frac{3}{4} - \frac{1}{4} =$

d $\frac{9}{10} - \frac{5}{10}$

f $\frac{4}{7} - \frac{1}{7} =$

h $1 - \frac{1}{6}$

j $1 - \frac{3}{5} =$

3 Complete :

a $\frac{9}{12} + \frac{\dots}{12} = \frac{10}{12}$

c $\frac{5}{9} - \frac{\dots}{9} = \frac{2}{9}$

e $\frac{6}{7} - \frac{2}{7} = \frac{\dots}{7}$

g $\frac{18}{18} - \frac{\dots}{18} = \frac{1}{18}$

i $\frac{\dots}{6} + \frac{2}{6} = \frac{5}{6}$

k $\frac{5}{7} + \frac{\dots}{7} = \frac{6}{7}$

b $\frac{5}{14} - \frac{\dots}{14} = \frac{1}{14}$

d $\frac{3}{3} - \frac{1}{3} = \frac{\dots}{3}$

f $\frac{\dots}{9} - \frac{5}{9} = \frac{4}{9}$

h $\frac{23}{26} - \frac{2}{26} = \frac{\dots}{26}$

j $\frac{3}{11} + \frac{2}{11} = \frac{\dots}{11}$

l $\frac{\dots}{8} - \frac{2}{8} = \frac{3}{8}$

4. Shaimaa ate $\frac{1}{5}$ Baku of biscuit and then ate $\frac{2}{5}$ baku

What is the fraction that expresses the total of what Shaimaa ate?

Notice : All the denominators are the same
(We add the numerators only)

Then $\frac{3}{5} + \frac{2}{5} = \frac{5}{5}$

5. Ali brought $\frac{2}{3}$ a piece of candy from the fridge And he gave $\frac{1}{3}$ to his sister What is the fraction that expresses the remaining part with him?

Notice : All the denominators are the same
(We Subtract the numerators only)

Then $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$

6. Ayesha and Alan baked two pies of the same size, and Ayesha gave $\frac{1}{2}$ her pie to her children, and Alan gave $\frac{1}{3}$ her cake to her children as well Which children got more Ayesha's children or Alan's children?

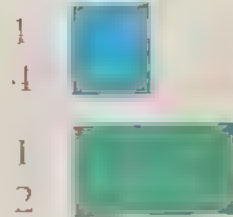
Notice : all denominators are unlike

(compare between the length of the two colours

The length of $\frac{1}{2}$ part is longer

The fraction $\frac{1}{2} > \frac{1}{3}$ The fraction $\frac{1}{2}$

So : children Alan's takes the largest size



7. The bottle of milk was $\frac{3}{4}$ full as much as you drank $\frac{2}{4}$ from the bottle. What fraction expresses the amount of the remaining milk?

Notice : All the denominators are the same
(We Subtract the numerators only)

Then the remaining $= \frac{3}{4} - \frac{2}{4} = \frac{1}{4}$





Complete the following :

$$\frac{1}{3} + \frac{1}{3} = \dots$$

$$\frac{3}{4} - \frac{1}{4} = \dots$$

$$\frac{5}{7} + \frac{1}{7} = \dots$$

$$\frac{5}{8} - \frac{3}{8} = \dots$$

$$1 - \frac{1}{4} = \dots$$

$$1 - \frac{3}{5} = \dots$$

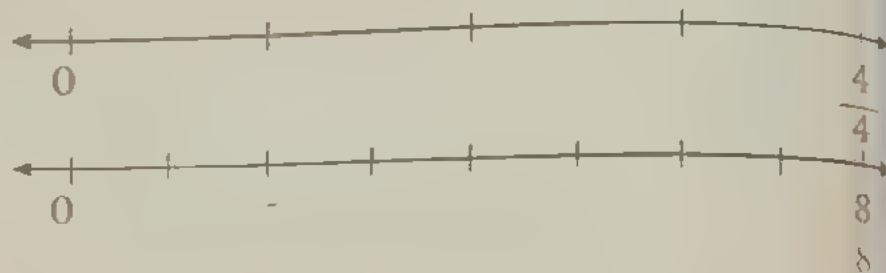
$$\frac{1}{2} + \frac{1}{2} = \dots$$

$$\frac{2}{5} - \frac{3}{5} = \dots$$



Compare between $\frac{1}{4}$ and $\frac{1}{8}$. Show your work in the number line :

$$\frac{1}{4} \quad \square \quad \frac{1}{8}$$



Compare using ($<$, $=$, $>$) :

$$\frac{1}{3} \quad (\dots) \quad \frac{1}{8}$$

$$\frac{1}{2} \quad (\dots) \quad \frac{1}{2}$$

$$\frac{4}{9} \quad (\dots) \quad \frac{4}{7}$$

$$\frac{1}{4} \quad (\dots) \quad \frac{1}{5}$$

$$\frac{1}{5} \quad (\dots) \quad \frac{1}{3}$$

$$\frac{1}{6} \quad \dots \quad \frac{1}{9}$$

$$1 \quad \dots \quad \frac{1}{3}$$

$$\frac{7}{8} \quad \dots \quad 1$$



4 Arrange the following :

a Ascendingly : $\frac{3}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, 1 , 1

The order :

b Descendingly : $\frac{3}{8}$, $\frac{3}{5}$, $\frac{3}{4}$, $\frac{3}{7}$, $\frac{3}{9}$

The order :

5 Colour according to the fraction



6 Answer the following :

a Complete: If you divide 25 counting items into fifths, then every fifth = _____ of the counting elements.

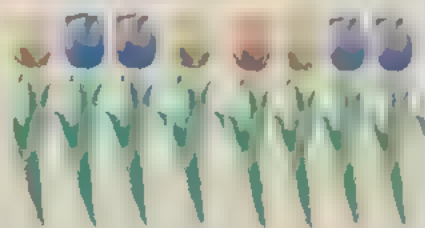
b Which is bigger half a cookie or half a cake ?

c Write the fraction that represents the coloured part.

The fraction is



d In my grandmother's garden 8 flowers , one of which is red .What is the fraction for the number of flowers that are not red ?



1 Complete the following:

$2 \times 7 \times 2 = (\quad \times \quad) \times 2 = \quad \times 2 =$

$36 \div \quad = 6$, because $6 \times \quad = 36$

Number of minutes in half an hour = minute

The perimeter of a square with side 9 cm = cm

The area of a square with side 9 cm = cm^2

2 days = hours.

2 Complete the facts of 3, 6, 18:

$3 \times \quad = 18$, $\quad \times 6 = 18$

$18 \div \quad = 6$, $18 \div 6 =$

$6 + 6 + 6 = 6 \times \quad =$

$3 + 3 + 3 + 3 + 3 + 3 = 3 \times \quad = 18$

$3 \times 6 = \quad \times 3 =$

3 Circle the value equal to the problem :

$3 \times 6 \times 5$

900 $(3 \times 5) \times 6$ 3×30 $3 \times (6 + 5)$

4 Complete the following :

$\frac{2}{9} + \frac{4}{9} = \frac{\dots}{9}$ Then $\frac{6}{9} - \frac{2}{9} = \frac{\dots}{9}$, $\frac{6}{9} - \frac{\dots}{9} = \frac{\dots}{9}$

$\frac{3}{8} + \frac{1}{8} = \frac{\dots}{8}$ Then $\frac{4}{8} - \frac{3}{8} = \frac{\dots}{8}$, $\frac{4}{8} - \frac{\dots}{8} = \frac{\dots}{8}$

$3 \times 19 = 3 \times (10 + \dots)$

$= (3 \times \dots) + (3 \times \dots) = \dots + \dots = \dots$

5 Complete the following :

a $\frac{3}{5} + \frac{1}{5} = \dots$

b $\frac{3}{5} - \frac{1}{5} = \dots$

c $\frac{1}{7} + \frac{1}{7} = \dots$

d $\frac{1}{7} - \frac{1}{7} = \dots$

e $1 - \frac{4}{5} = \dots$

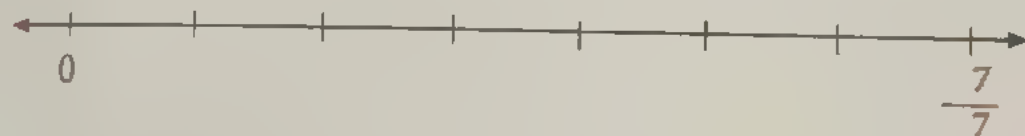
f $1 - \frac{1}{8} = \dots$

g Half the number (16) =

h Third the number (15) =

6 Answer the following :

i Using the number line show $\frac{1}{7}$ is less than $\frac{1}{3}$



j Draw a rectangle then divide it into 4 equal parts, then write the fraction which expresses each part.

Chapter Four



Vocabulary

Equivalent

Associative

Factors

Parentheses

Product

Property

Justify

Length

Parallel

Perimeter

Width

Inverse

Addend

Bar model

Distributive

Perseverance

Review

Estimation

Reasonableness

Fact family

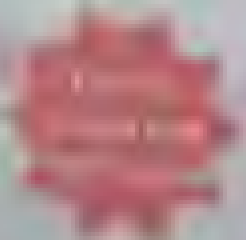
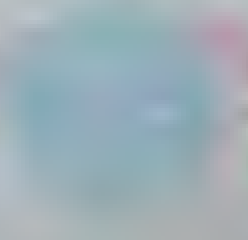
Minute

Quotient

Heat

Roundness

Content



Exercise
inspired from
Discover

Equivalent Fraction

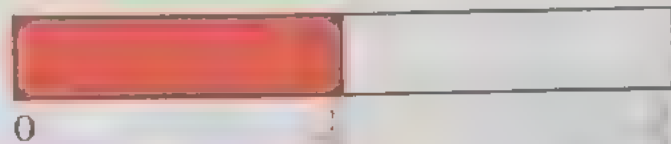
Remember that

If the numerator equal to the denominator the fraction

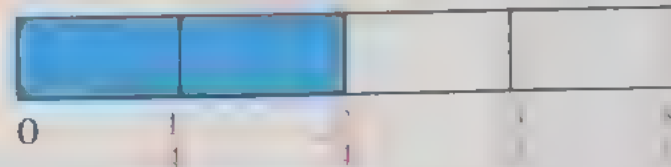
$$1 = \frac{2}{2} = \frac{3}{3} = \frac{4}{4} = \frac{6}{6} = \frac{8}{8} =$$

1 Dividing the strip to know the equivalent fraction:

The red part = $\frac{1}{2}$



The blue part = $\frac{2}{4}$



The green part = $\frac{4}{8}$



The red part equivalent to the blue part

The fraction $\frac{1}{2}$ equivalent to $\frac{2}{4}$ Then $\frac{1}{2} = \frac{2}{4}$

The red part equivalent to the green part

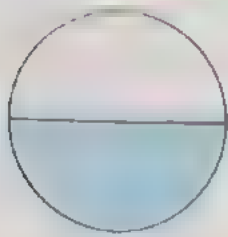
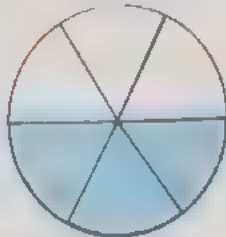
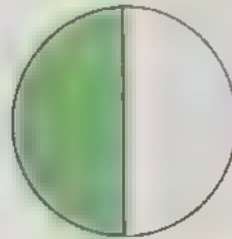
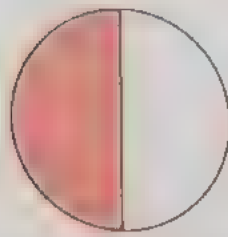
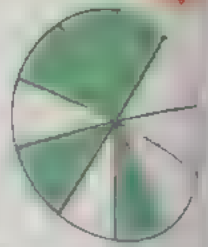
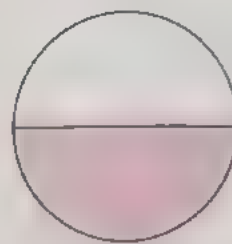
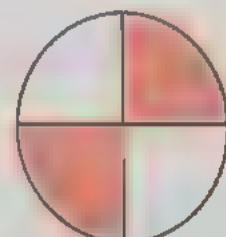
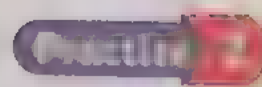
The fraction $\frac{1}{2}$ equivalent to $\frac{4}{8}$ Then $\frac{1}{2} = \frac{4}{8}$

Then $\frac{2}{4} = \frac{4}{8}$

The numerator the denominator

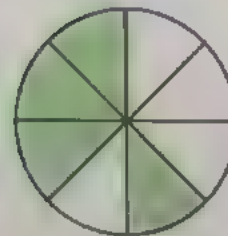
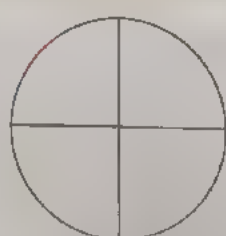


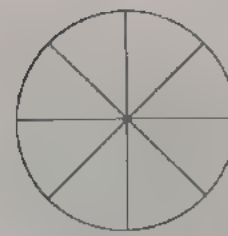
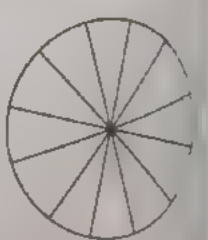
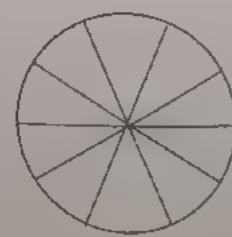
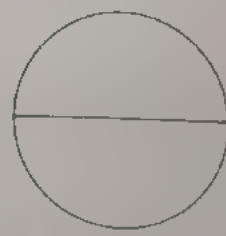
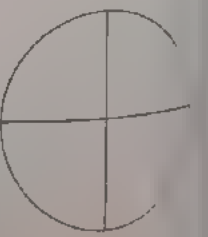
Record what fraction each model shows :


 $\frac{1}{2}$
 $=$

 $\frac{3}{6}$

 $=$

 $=$

 $=$


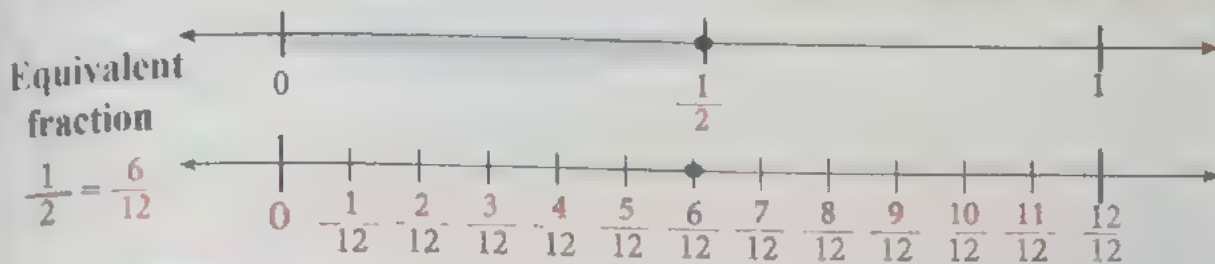
Colour $\frac{1}{2}$ each model ,

Then write the fraction under each one :

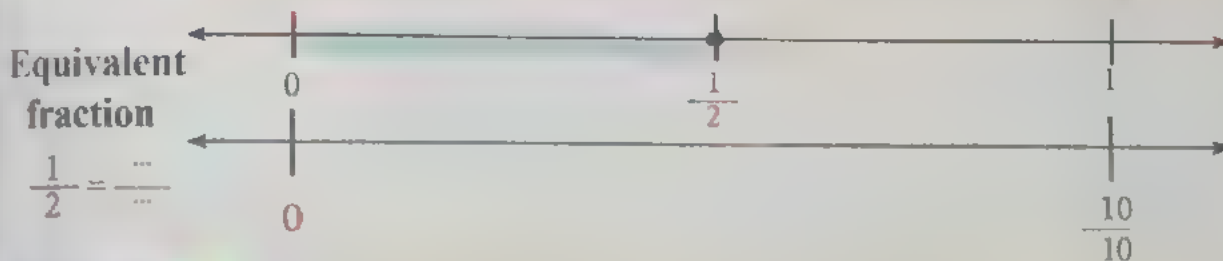

 $\frac{4}{8}$
 $=$

 $\frac{2}{4}$

 $=$

 $=$

 $=$


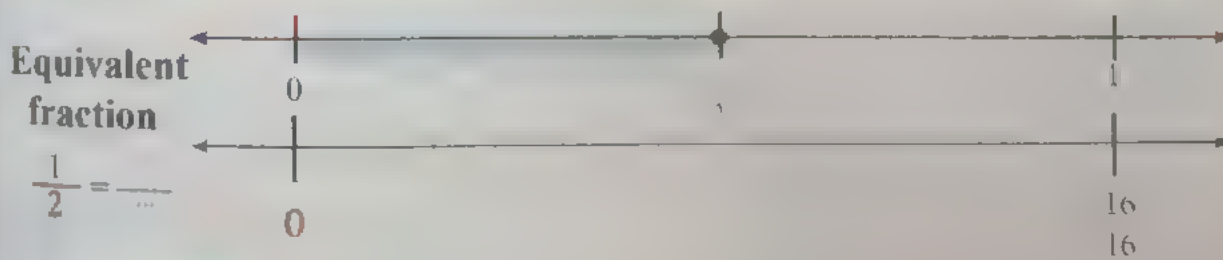
Activity 2 Divide the second number line into 12 equal parts, then write the equivalent fraction to $\frac{1}{2}$:



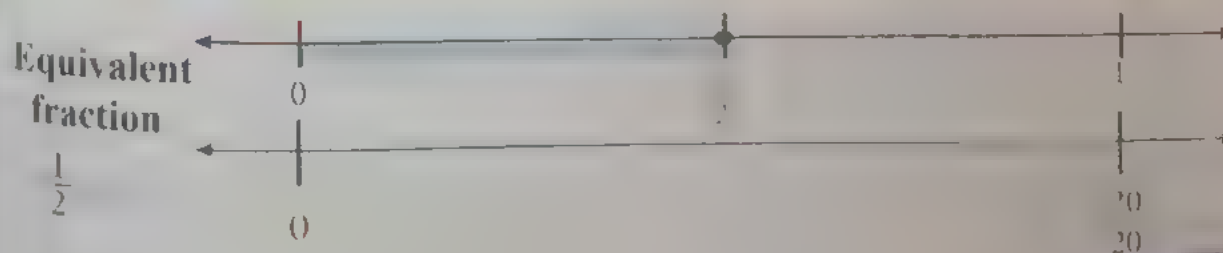
Practice 1 Divide the second number line into 10 equal parts, then write the equivalent fraction to $\frac{1}{2}$:



Practice 2 Divide the second number line into 16 equal parts, then write the equivalent fraction to $\frac{1}{2}$:



Practice 3 Divide the second number line into 20 equal parts, then write the equivalent fraction to $\frac{1}{2}$:



Activity 3 Complete the following :

** If there is 8 balls ,

then $\frac{1}{2}$ the balls = 4 balls from the 8 balls

Then : $\frac{1}{2}$ The ball = $\frac{4}{8}$ of all balls

Problem 1 Complete the following :

1 The box of wax has 10 wax ,

then $\frac{1}{2}$ the wax = 5 wax from the 10 wax





Then : $\frac{1}{2}$ the wax = $\frac{5}{10}$ of the wax

2 The box of pens has 18 pens ,

then $\frac{1}{2}$ the pens = 9 pens from the 18 pens

then $\frac{1}{2}$ the number of pens = $\frac{9}{18}$ of all pens

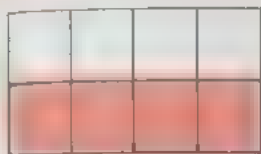
Example 1 Complete as in (a) :

	Number of parts of the model	Half the number of parts	Equivalent fraction
	2 equal parts	1 is half 2	$\frac{1}{2} = \frac{1}{2}$
	4 equal parts	2 is half 4	$\frac{1}{2} = \frac{2}{4}$
	6 equal parts	3 is half 6	$\frac{1}{2} = \frac{3}{6}$
	8 equal parts	4 is half 8	$\frac{1}{2} = \frac{4}{8}$

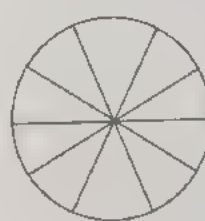
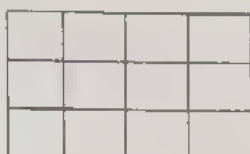


Self - check on lesson (91, 92)

1 Colour half each model then write the equivalent fraction to $\frac{1}{2}$ below each model :



$$\frac{4}{8}$$



2 Choose the fraction that equivalent to $\frac{1}{2}$ as the $\frac{1}{2}$:

$$\frac{4}{4}, \frac{2}{4}, \frac{1}{4}$$

$$\frac{4}{8}, \frac{3}{8}, \frac{5}{8}$$

$$\frac{2}{10}, \frac{1}{10}, \frac{5}{10}$$

$$\frac{2}{6}, \frac{5}{6}, \frac{3}{6}$$

$$\frac{4}{12}, \frac{3}{12}, \frac{6}{12}$$

$$\frac{4}{20}, \frac{10}{20}, \frac{1}{20}$$

3 Subtract as the :

$$1 - \frac{3}{4} = \frac{1}{4} - \frac{3}{4} = \frac{1}{4}$$

$$1 - \frac{5}{7} = \frac{2}{7}$$

$$1 - \frac{1}{6} = \frac{5}{6}$$

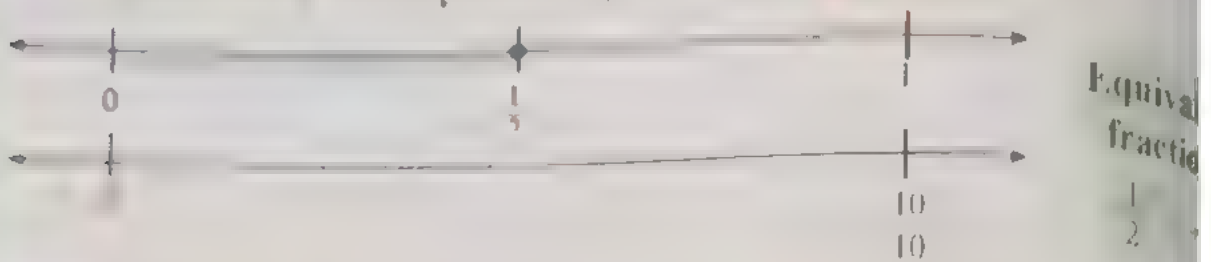
$$1 - \frac{4}{9} = \frac{5}{9}$$

$$1 - \frac{4}{5} = \frac{1}{5}$$

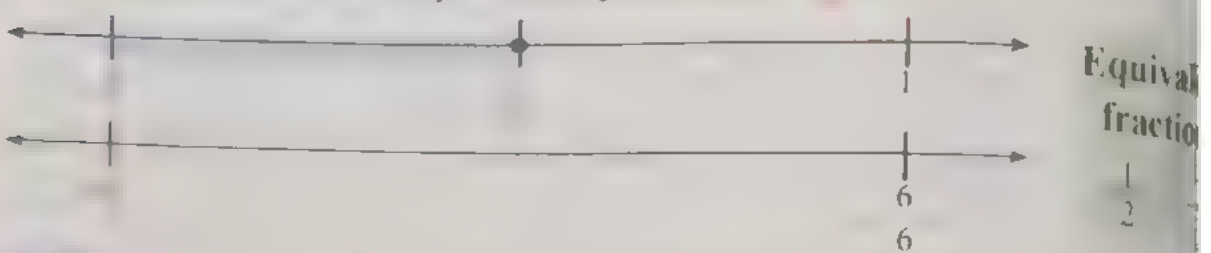
$$1 - \frac{6}{7} = \frac{1}{7}$$

$$1 - \frac{2}{3} = \frac{1}{3}$$

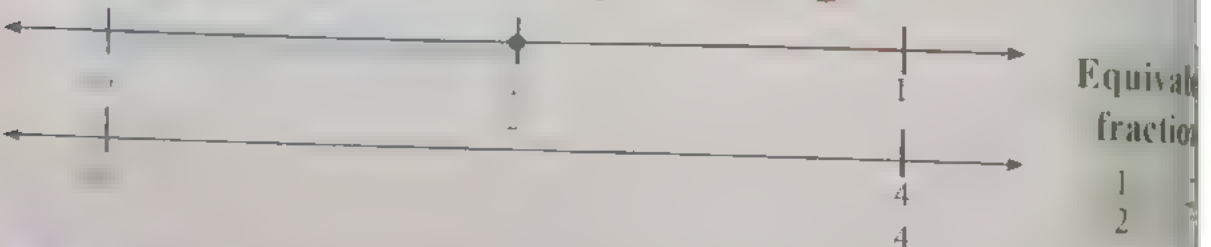
- 4 Divide the second number line into 10 equal parts, then write the equivalent fraction to $\frac{1}{2}$.



- 5 Divide the second number line into 6 equal parts, then write the equivalent fraction to $\frac{1}{2}$.




- 6 Divide the second number line into 4 equal parts, then write the equivalent fraction to $\frac{1}{2}$.



- 7 Complete to get the equivalent fraction to $\frac{1}{2}$ as in (a).

	Number of parts of the model	Half the number of parts	Equivalent fraction
	12 equal parts	6 is half 12	$\frac{1}{2} = \frac{6}{12}$
	16 equal parts	8 is half 16	$\frac{1}{2} = \frac{8}{16}$
	20 equal parts	10 is half 20	$\frac{1}{2} = \frac{10}{20}$

 Use the equivalent fraction to $\frac{1}{2}$ to add as the

$$\frac{1}{2} + \frac{2}{10} = \frac{3}{10} + \frac{2}{10} = \frac{5}{10} \quad \frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

$$\frac{1}{2} + \frac{3}{10} = \frac{3}{10} + \frac{3}{10} =$$

$$\frac{1}{2} + \frac{3}{6} = \frac{3}{6} + \frac{3}{6} =$$

$$\frac{1}{2} + \frac{1}{12} = \frac{1}{12} + \frac{1}{12} =$$

$$\frac{1}{2} + \frac{4}{14} = \frac{4}{14} + \frac{4}{14} =$$

$$\frac{1}{2} + \frac{2}{6} = \frac{2}{6} + \frac{2}{6} =$$

$$\frac{1}{2} + \frac{1}{4} = \frac{1}{4} + \frac{1}{4} =$$

$$\frac{1}{2} + \frac{2}{8} = \frac{2}{8} + \frac{2}{8} =$$

$$\frac{1}{2} + \frac{3}{16} = \frac{3}{16} + \frac{3}{16} =$$

 Use the equivalent fraction to $\frac{1}{2}$ to subtract as the

$$\frac{1}{2} - \frac{5}{24} = \frac{12}{24} - \frac{5}{24} = \frac{7}{24} \quad \frac{1}{2} = \frac{5}{10} = \frac{6}{12} = \frac{7}{14}$$

$$\frac{1}{2} - \frac{3}{8} = \frac{3}{8} - \frac{3}{8} =$$

$$\frac{1}{2} - \frac{1}{10} = \frac{1}{10} - \frac{1}{10} =$$

$$\frac{1}{2} - \frac{2}{14} = \frac{2}{14} - \frac{2}{14} =$$

$$\frac{1}{2} - \frac{4}{12} = \frac{4}{12} - \frac{4}{12} =$$

$$\frac{1}{2} - \frac{5}{16} = \frac{5}{16} - \frac{5}{16} =$$

$$\frac{1}{2} - \frac{7}{18} = \frac{7}{18} - \frac{7}{18} =$$

$$\frac{1}{2} - \frac{5}{20} = \frac{5}{20} - \frac{5}{20} =$$

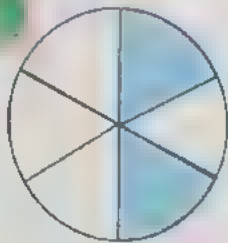
$$\frac{1}{2} - \frac{1}{4} = \frac{1}{4} - \frac{1}{4} =$$

Lesson (93 , 94)

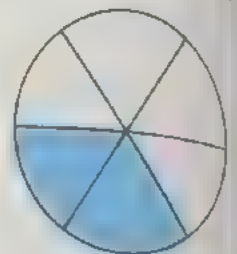
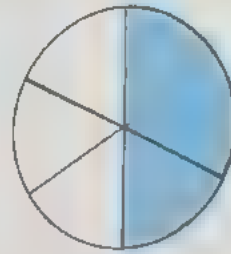
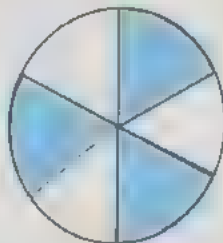
Apply on equivalent fraction

Practice 1

Write the fraction then circle that equivalent to $\frac{1}{2}$

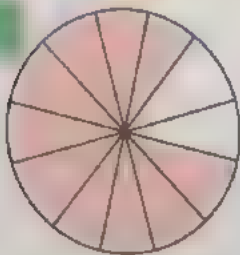


$$\frac{2}{6}$$

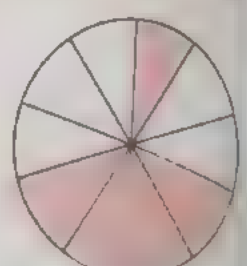
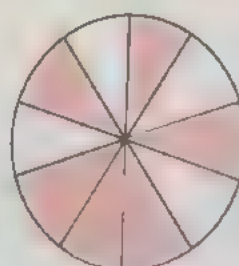
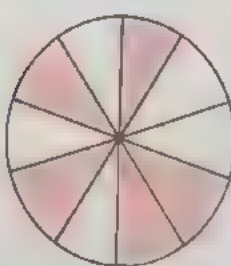


Practice 2

Write the fraction then circle that equivalent to $\frac{1}{3}$

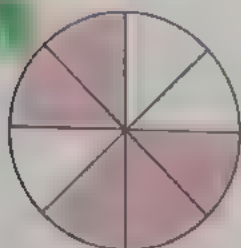


$$\frac{10}{12}$$

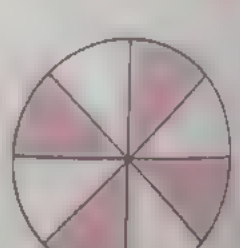
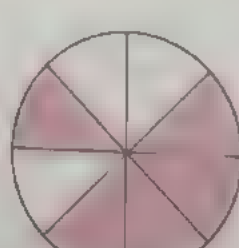
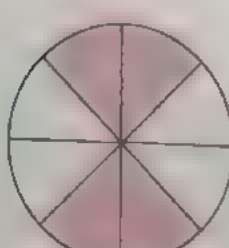


Practice 3

Write the fraction then circle that equivalent to $\frac{1}{4}$



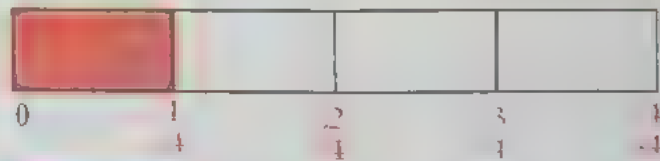
$$\frac{5}{8}$$



Activity 1 Dividing the model to know the equivalent to fraction $\frac{1}{4}$.

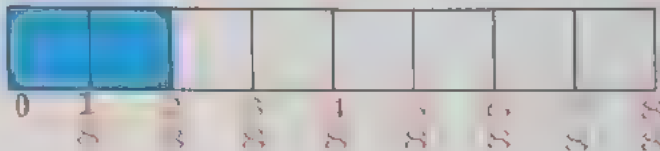
The fraction of red part

$\frac{1}{4}$



The fraction of blue part

$\frac{2}{8}$



Notice The red part equal to the blue part.

The fraction $\frac{1}{4}$ equivalent $\frac{2}{8}$

Then $\frac{1}{4} = \frac{2}{8}$

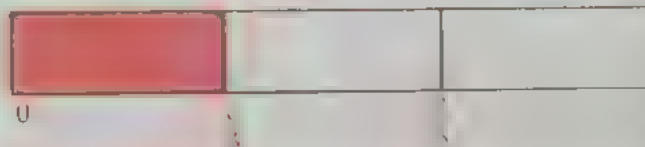
Some of the equivalent fractions

$$\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \frac{5}{20} = \frac{6}{24}$$

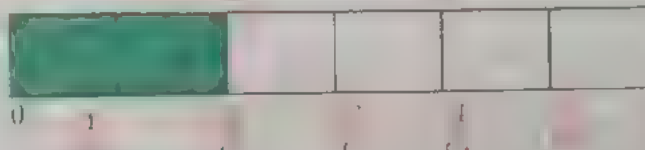
Notice the numerator equal fourth the denominator

Activity 2 Find the equivalent fraction to $\frac{1}{3}$:

The red fraction = $\frac{1}{3}$



The green fraction = $\frac{2}{6}$



Notice The red part equal to the green part

The fraction $\frac{1}{3}$ equivalent $\frac{2}{6}$

Then $\frac{1}{3} = \frac{2}{6}$

Some of the equivalent fractions

$$\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12} = \frac{5}{15} = \frac{6}{18}$$

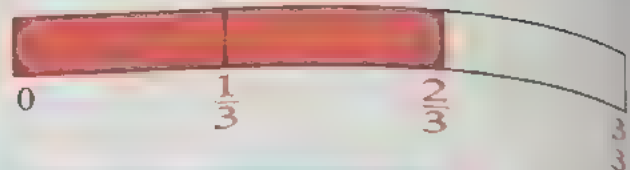
Notice the numerator equal third the denominator



Practice

Find the equivalent fraction to $\frac{2}{3}$:

The red fraction = $\frac{2}{3}$



The green fraction =



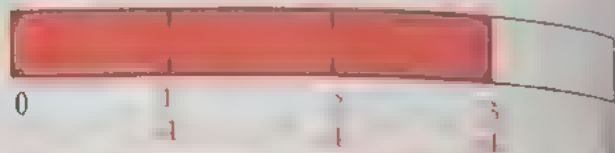
The fraction $\frac{2}{3}$ equivalent to

Then $\frac{2}{3} =$

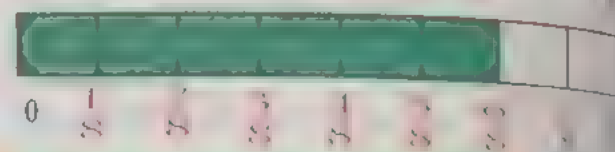
Practice

Find the equivalent fraction to $\frac{3}{4}$:

The red fraction = $\frac{3}{4}$



The green fraction =



The blue fraction =

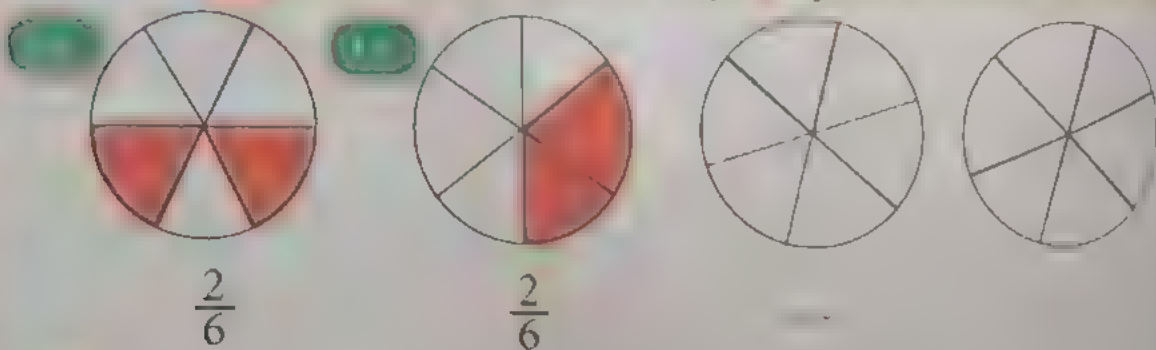


The fraction $\frac{3}{4}$ equivalent to , equivalent to

Then $\frac{3}{4} =$

Practice

Colour with different ways $\frac{1}{6}$ of each model as the



Practice

Choose the equivalent fraction as in (a) :



$\frac{1}{4}$

$(\frac{3}{8}, \frac{2}{8}, \frac{1}{4})$



$\frac{1}{2}$

$(\frac{7}{12}, \frac{6}{12}, \frac{5}{12})$



$\frac{2}{3}$

$(\frac{2}{6}, \frac{3}{6}, \frac{4}{6})$



$\frac{2}{4}$

$(\frac{5}{10}, \frac{6}{10}, \frac{7}{10})$



$\frac{1}{3}$

$(\frac{2}{6}, \frac{5}{6}, \frac{3}{6})$



$\frac{3}{4}$

$(\frac{8}{8}, \frac{7}{8}, \frac{6}{8})$

Practice

Join with the equivalent fraction as in (a):



$(\frac{1}{8} + \frac{1}{8})$

$\frac{1}{3}$



$(\frac{1}{3} + \frac{1}{3})$

$\frac{1}{4}$



$(\frac{1}{6} + \frac{1}{6})$

$\frac{1}{2}$



$(\frac{3}{4} + \frac{1}{4})$

$\frac{2}{3}$

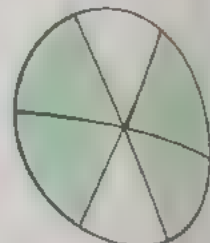
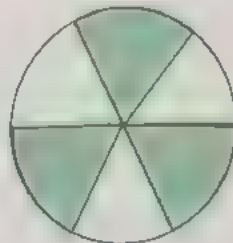
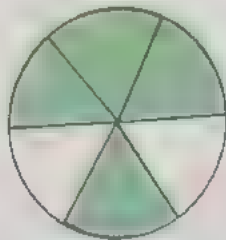
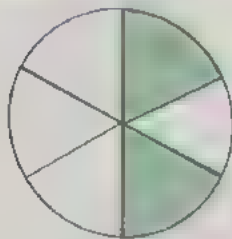


$(\frac{3}{10} + \frac{2}{10})$

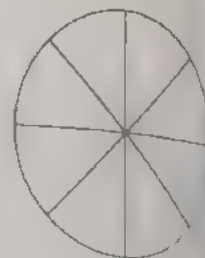
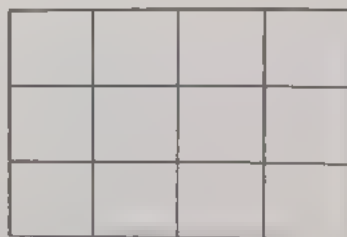
$\frac{5}{5}$

Self-check on lesson (93, 94)

1 Write the fraction then circle that equivalent to $\frac{2}{3}$



2 Colour fourth each model then write the equivalent fraction to $\frac{1}{4}$ as the example:



3 Join with the equivalent fraction:



$$\frac{1}{2}$$

$$\frac{1}{3}$$

$$\frac{1}{4}$$

$$\frac{2}{3}$$

$$\frac{3}{4}$$

$$\frac{6}{6}$$

$$\frac{2}{6}$$

$$\frac{2}{4}$$

$$\frac{6}{8}$$

$$\frac{2}{8}$$

$$\frac{4}{6}$$

$$\frac{5}{5}$$



Use the equivalent fraction to $\frac{1}{3}$ to find the result as the Ex :

$$\frac{1}{3} + \frac{2}{9} = \frac{3}{9} + \frac{2}{9} = \frac{5}{9}$$

$$\frac{1}{3} + \frac{3}{6} = \frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

$$\frac{1}{3} + \frac{2}{15} = \frac{2}{15} + \frac{2}{15} = \frac{4}{15}$$

$$\frac{1}{3} - \frac{1}{12} = \frac{4}{12} - \frac{1}{12} = \frac{3}{12} = \frac{1}{4}$$

$$\frac{1}{3} - \frac{1}{6} = \frac{2}{6} - \frac{1}{6} = \frac{1}{6}$$

$$\frac{1}{3} + \frac{2}{6} = \frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \frac{2}{3}$$

$$\frac{1}{3} + \frac{4}{12} = \frac{4}{12} + \frac{4}{12} = \frac{8}{12} = \frac{2}{3}$$

$$\frac{1}{3} + \frac{5}{9} = \frac{3}{9} + \frac{5}{9} = \frac{8}{9}$$

$$\frac{1}{3} - \frac{1}{9} = \frac{3}{9} - \frac{1}{9} = \frac{2}{9}$$



Use the equivalent fraction to $\frac{1}{4}$ to find the result as the Ex :

$$\frac{1}{4} - \frac{5}{8} = \frac{2}{8} - \frac{5}{8} = -\frac{3}{8}$$

$$\frac{3}{4} - \frac{3}{12} = \frac{9}{12} - \frac{3}{12} = \frac{6}{12} = \frac{1}{2}$$

$$\frac{3}{4} + \frac{1}{16} = \frac{12}{16} + \frac{1}{16} = \frac{13}{16}$$

$$\frac{3}{4} + \frac{2}{8} = \frac{6}{8} + \frac{2}{8} = \frac{8}{8} = 1$$

$$\frac{3}{4} - \frac{4}{12} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12}$$

$$\frac{3}{4} - \frac{10}{16} = \frac{12}{16} - \frac{10}{16} = \frac{2}{16} = \frac{1}{8}$$

$$\frac{3}{4} + \frac{1}{8} = \frac{6}{8} + \frac{1}{8} = \frac{7}{8}$$

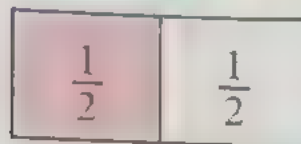
$$\frac{3}{4} - \frac{5}{12} = \frac{9}{12} - \frac{5}{12} = \frac{4}{12} = \frac{1}{3}$$

$$\frac{3}{4} - \frac{7}{16} = \frac{12}{16} - \frac{7}{16} = \frac{5}{16}$$

Lesson (95 , 96 , 97)

Story problem on fraction

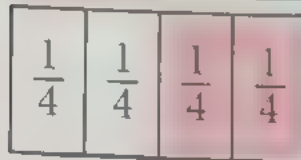
Activity 1 Find the equivalent fraction :



$$\frac{1}{2} = \frac{2}{4}$$



$$\frac{2}{3} = \frac{4}{6}$$



$$\frac{1}{2} = \frac{2}{4}$$



$$\frac{2}{3} = \frac{4}{6}$$

$\times 2$

$\times 2$



$$\frac{1}{2} = \frac{6}{12}$$



$$\frac{1}{2} = \frac{6}{12}$$

Practice 1 Complete as the (a) to get equivalent fraction :

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

$$\frac{1}{2} = \frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

$$\frac{1}{2} = \frac{1 \times 4}{2 \times 4} = \frac{4}{8}$$

$$\frac{1}{3} = \frac{1 \times 2}{3 \times 2} = \frac{2}{6}$$

$$\frac{1}{3} = \frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$

$$\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{2}{8}$$

$$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

$$\frac{2}{4} = \frac{2 \times 2}{4 \times 2} = \frac{4}{8}$$

$$\frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8}$$

$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$



Bakkar Series

Primary Three - Second term

Practice 1

Complete in the same way to find equivalent fraction as :

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{1 \times 3}{2 \times 3} = \frac{1 \times 4}{2 \times 4}$$

$$\frac{2}{4} = \frac{2 \times 1}{4 \times 1} = \frac{2 \times 2}{4 \times 2} = \frac{2 \times 3}{4 \times 3}$$

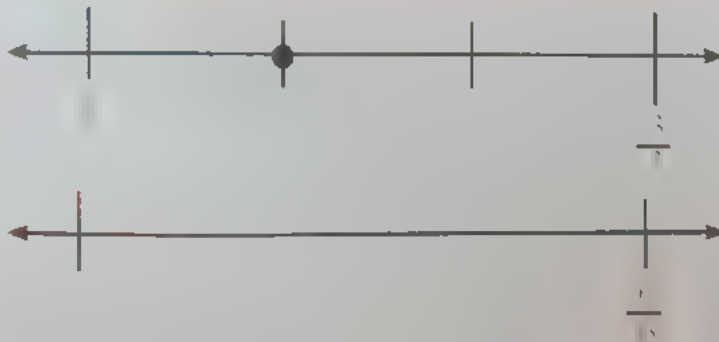
$$1 = \frac{1}{1} = \frac{1 \times 2}{1 \times 2} = \frac{1 \times 3}{1 \times 3} = \frac{1 \times 4}{1 \times 4}$$

$$\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{3 \times 3}{5 \times 3} = \frac{3 \times 4}{5 \times 4}$$

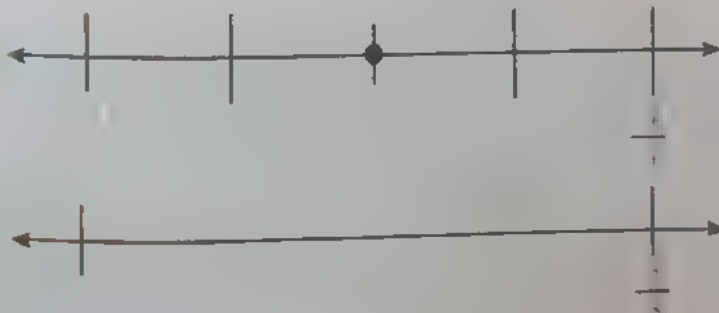
$$\frac{2}{7} = \frac{2 \times 2}{7 \times 2} = \frac{2 \times 3}{7 \times 3} = \frac{2 \times 4}{7 \times 4}$$

Practice 2

Write the fraction of the dot on the first line using the second line to show equivalent fraction to the first :



$$\frac{1}{3} = \frac{1}{6}$$



$$\frac{3}{4} = \frac{6}{8}$$

Practice 6

Hafsa and Hani both had 1 litre of juice.
Hafsa said that her family drank $\frac{1}{4}$ of the litre.
Hani said his family drank the same amount.
If Hani measured his amount in eighths,
how much juice did his family drink?

Find the equivalent fraction to $\frac{1}{4}$ with denominator 8

The amount of $\frac{1}{4} = \frac{2}{8}$ litre

Practice 7

Jana and Menna each made a large pizza
for dinner. Jana's pizza was cut into sixths,
and Menna's pizza was cut into twelfths.
Jana ate $\frac{1}{2}$ of her pizza. If Menna wants to
eat the same amount of pizza as Jana.
How many parts of pizza will she have to eat?

Find the equivalent fraction to $\frac{1}{2}$ with denominator

$\frac{1}{2} = \frac{2}{4}$ number of pieces = (numerator)

Practice 8

Hala & Hanin have two tin of the same kind
Hala use $\frac{1}{4}$ of her tin, Hanin use $\frac{1}{8}$ of her tin.
Hanin use less or more than Hala?

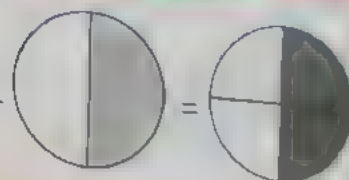
Hala used $\frac{1}{4}$, Hanin used $\frac{1}{8}$ find fraction equal to $\frac{1}{4}$ as



Then Hanin use $\frac{2}{8}$ of the tin

Activity 2 As known :

$$\frac{1}{2} = \frac{2}{4} \text{ Mean}$$



Notice $\frac{2}{4}$ the numerator half the denominator

Then the fraction $\frac{2}{4}$ equal to the fraction $\frac{1}{2} \rightarrow \frac{1}{2} = \frac{2}{4}$

Also the $\frac{5}{15}$ **numerator equal to third the denominator.**

Then the fraction $\frac{5}{15}$ equal to the fraction $\frac{1}{3} \rightarrow \frac{5}{15} = \frac{1}{3}$

Also, the $\frac{2}{8}$ **numerator equal to fourth the denominator.**

Then the fraction $\frac{2}{8}$ equal to the fraction $\frac{1}{4} \rightarrow \frac{1}{4} = \frac{2}{8}$

Practice 2 Complete as in (a) :

● The fraction $\frac{3}{21}$: It's numerator equal to **Seventh** the denominator

Then the fraction $\frac{3}{21}$ equal to the fraction $\frac{1}{7} \rightarrow \frac{3}{21} = \frac{1}{7}$

● The fraction $\frac{3}{15}$: It's numerator equal to **Fifth** the denominator

Then the fraction $\frac{3}{15}$ equal to the fraction $\frac{1}{5} \rightarrow \frac{3}{15} = \frac{1}{5}$

● The fraction $\frac{4}{16}$: It's numerator equal to **Fourth** the denominator

Then the fraction $\frac{4}{16}$ equal to the fraction $\frac{1}{4} \rightarrow \frac{4}{16} = \frac{1}{4}$

● The fraction $\frac{3}{9}$: It's numerator equal to **Third** the denominator

Then the fraction $\frac{3}{9}$ equal to the fraction $\frac{1}{3} \rightarrow \frac{3}{9} = \frac{1}{3}$

Practice

Complete as in (a).

$$\frac{6}{18}$$

$$\frac{4}{8}$$

$$\frac{3}{6}$$

$$\frac{2}{14}$$

$$\frac{2}{5}$$

$$\frac{2}{55}$$

$$\frac{8}{16}$$

$$\frac{9}{18}$$

$$\frac{6}{24}$$

Practice

Complete as in (c).

$$\frac{4}{6}$$

$$\frac{5}{10}$$

$$\frac{7}{14}$$

$$\frac{3}{9}$$

$$\frac{4}{16}$$

$$\frac{5}{15}$$

$$\frac{2}{8}$$

$$\frac{3}{12}$$

$$\frac{5}{20}$$

$$\frac{2}{10}$$

$$\frac{3}{15}$$

$$\frac{4}{20}$$



Bukuwar Series

Primary Three - second term

Self check on lesson (95, 96, 97)

Complete as in (a)

$$\frac{9}{12} = \frac{3}{4} \quad \text{Then}$$

$$\frac{3}{3} = \frac{4}{4}$$

$$\frac{2}{5} = \frac{0}{5}$$

$$\frac{1}{2} = \frac{2}{2}$$

$$\frac{1}{1} = \frac{10}{10}$$

$$\frac{1}{2} = \frac{10}{20}$$

$$\frac{4}{7} = \frac{10}{17.5}$$

$$\frac{5}{6} = \frac{10}{12}$$

$$\frac{3}{3} = \frac{6}{6}$$

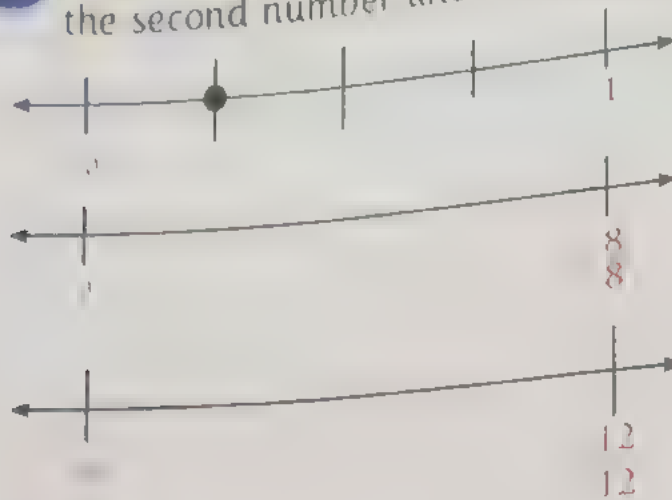
Join the equal fraction in (A), (B), (C) as the

- A**
- $\frac{3}{12}$
 - $\frac{3}{6}$
 - $\frac{3}{9}$
 - $\frac{9}{12}$
 - $\frac{6}{9}$

- B**
- $\frac{1}{2}$
 - $\frac{1}{3}$
 - $\frac{1}{4}$
 - $\frac{2}{3}$
 - $\frac{3}{4}$

- C**
- $\frac{2}{4}$
 - $\frac{2}{8}$
 - $\frac{4}{6}$
 - $\frac{2}{6}$
 - $\frac{6}{8}$

Write the fraction of the dot on the first line using the second number line to show a fraction to the first



	-	

Moutaz and Kamal were eating same sized cakes. Moutaz's cake was cut into thirds and Kamal's cake was cut into sixths. Moutaz ate 2 slices of his cake. What fraction of his cake does Kamal have to eat to eat the same amount as Moutaz?

Find the equivalent fraction to $\frac{2}{3}$ with denominator

$$\frac{2}{3} = \frac{\text{---}}{\text{---}} \text{ number of pieces} = (\text{numerator})$$

Mom gave Walid and Naglaa candy bars that were the same size. Walid ate $\frac{2}{3}$ of his candy bar. Naglaa ate $\frac{1}{3}$ of her candy bar. Who ate more of their candy bar?

Walid ate $\frac{2}{3}$, Naglaa ate $\frac{1}{3}$, find fraction equal to $\frac{2}{3}$ as

$\frac{2}{3}$ Then Naglaa ate $\frac{2}{3}$ of candy

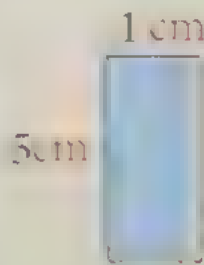
Relation between fraction and division

Practice 1

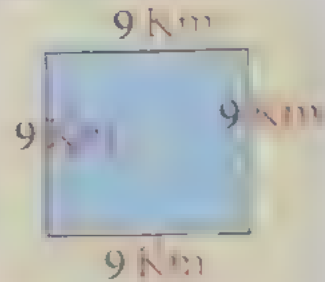
Complete the following



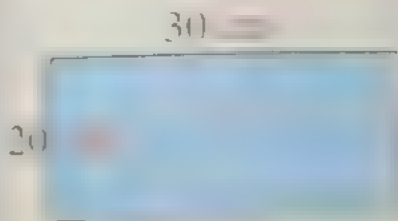
Area : m^2
Perimeter : m



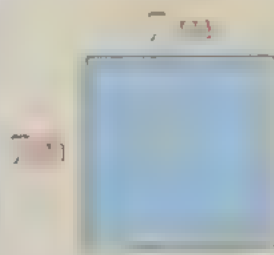
Area : cm
Perimeter : cm



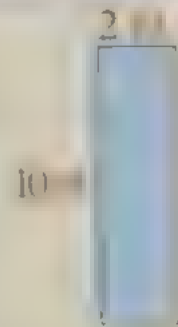
Area : km^2
Perimeter : km



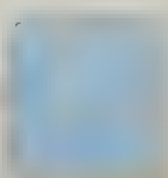
Area : cm^2
Perimeter : cm



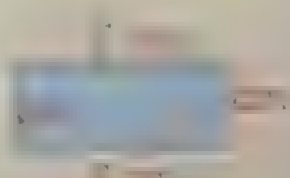
Area : m^2
Perimeter : m



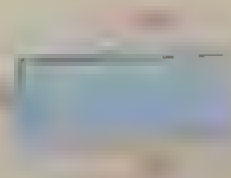
Area : m^2
Perimeter : m



Area : 25 m^2
Perimeter : 20 m



Area : 14 m^2
Perimeter : m



Area : 10 m^2
Perimeter : 14 m

1 3 friends share 15 pieces of biscuits equally.
How many pieces each of take?

Divide the bar model into 3 parts equally,
then divide 15 on the parts equally.

15		
5	5	5

The share of each $15 \div 3 = 5$ pieces

Practice 2 I have 20 figs to divide equally between 4 plate.
How many figs should I put in each plate?

Divide the rectangle into 4 parts equally,
then divide 20 on the parts equally.

20			
5			

Number of figs $20 \div 4 = 5$

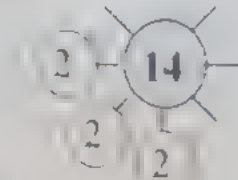
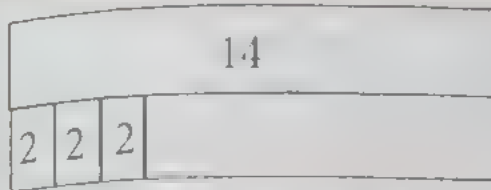
3 12 pieces of candy are shared equally
the same amount to each of 3 friends.
How many pieces of candy should each friend get?

Divide the rectangle into 3 parts equally,
then divide 12 on the parts equally.

Number of pieces $12 \div 3 = 4$

Activity 2 I have 14 figs. I want to give 2 figs to each friends.
How many friends can I give ?

Divide the bar model to equal parts each part contain 2 pieces.



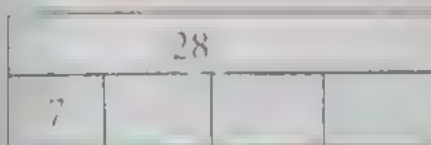
$$2 + 2 + 2 + \dots = 14$$

$$14 \div \text{number of friends} = 2 \text{ figs}$$

$$\text{Number of parts} = \text{number of friends} = 7$$

Practice 1 There are 28 crayons in the classroom that
need to be placed in 4 cups. Each cup must
have the same number of crayons.
How many crayons will be in each cup?

Divide the rectangle to 4 parts equally,
then divide 28 on the parts equally

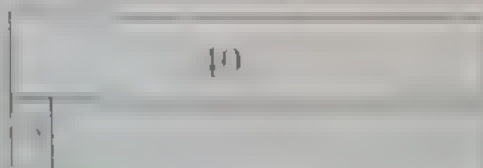


$$28 \div \text{number of cups} = 7 \text{ crayon}$$

$$\text{Number of parts} = \text{number of cups} = 4$$

Practice 2 Diaa has 40 toys he would like to split
equally among 5 friends.
How many toys should each friend receive ?

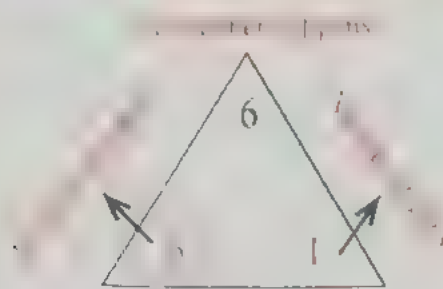
Divide the rectangle to 5 parts equally,
then divide 40 on the parts equally



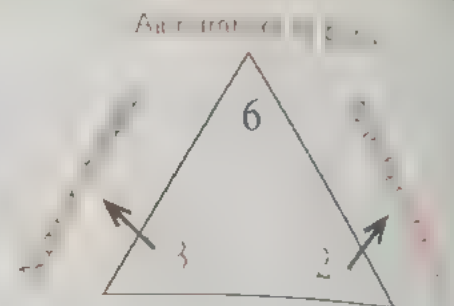
$$40 \div \text{number of friends} = 8 \text{ toy}$$

$$\text{Number of parts} = \text{number of friends} = 5$$

Activity 3 Divide 6 pens on some pupils equally with different way

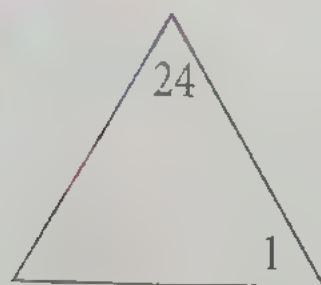


$$\begin{array}{l} 1 \times 6 = 6 \quad 6 \div 1 = 6 \\ 6 \div 1 = 6 \quad 6 \times 1 = 6 \end{array}$$



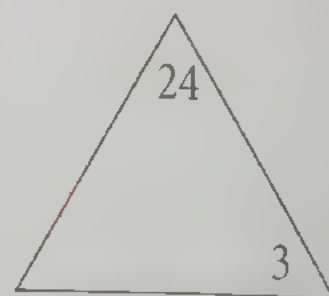
$$\begin{array}{l} 2 \times 3 = 6 \quad 3 \times 2 = 6 \\ 6 \div 2 = 3 \quad 6 \div 3 = 2 \end{array}$$

Practice 6 Divide 24 pieces of biscuits equally with different way as in (a) :

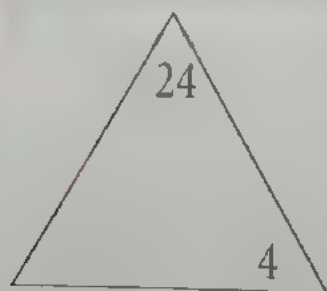


$$\begin{array}{l} 1 \times 24 = 24 \quad 24 \times 1 = 24 \\ 24 \div 1 = 24 \quad 24 \div 24 = 1 \end{array}$$

b

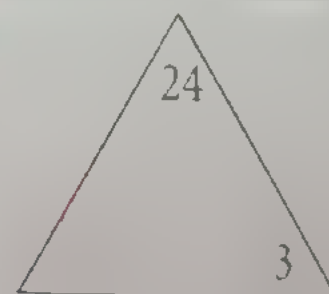


$$\begin{array}{l} 2 \times \quad = 24 \quad \times 2 = 24 \\ 24 \div 2 = \quad \quad 24 \div \quad = 2 \end{array}$$



$$\begin{array}{l} \times \quad = 24 \quad \times \quad = 24 \\ 24 \div \quad = \quad \quad 24 \div \quad = \quad \end{array}$$

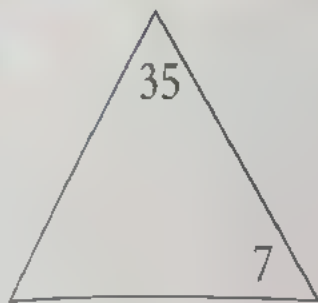
c



$$\begin{array}{l} \times \quad = 24 \quad \times \quad = 24 \\ 24 \div \quad = \quad \quad 24 \div \quad = \quad \end{array}$$

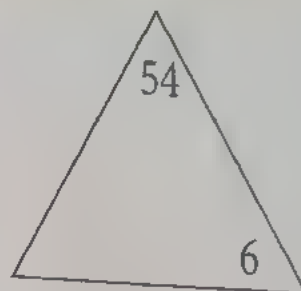


Find the missing factor and write the equation of the fact family :



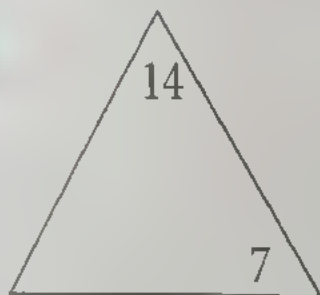
$$7 \times \quad = 35 \quad \times 7 = 35$$

$$35 \div 7 = \quad \quad 35 \div \quad = 7$$



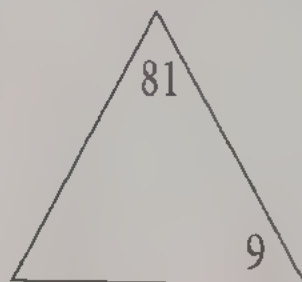
$$6 \times \quad = 54 \quad \times 6 = 54$$

$$54 \div 6 = \quad \quad 54 \div \quad = 6$$



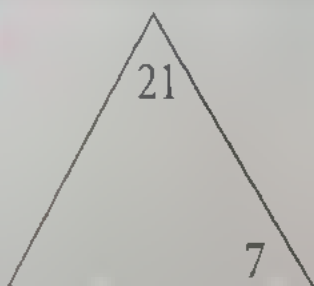
$$\times \quad = 14 \quad \times \quad = 14$$

$$14 \div \quad = \quad \quad 14 \div \quad = \quad$$



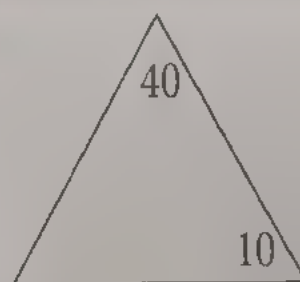
$$\times \quad = 81 \quad \times \quad = 81$$

$$81 \div \quad = \quad \quad 81 \div \quad = \quad$$



$$\times \quad = 21 \quad \times \quad = 21$$

$$21 \div \quad = \quad \quad 21 \div \quad = \quad$$



$$\times \quad = \quad \quad \times \quad = \quad$$

$$\div \quad = \quad \quad \div \quad = \quad$$

Self-check on lesson (98 to 100)

1 Notice then complete:

$$3 \times \quad = 5 \times \quad = 15$$

$$48 \div 8 = \quad \div 2$$

$$0 \div 9 = \quad - \quad \times 9$$

$$36 \div 4 = \quad \div 4$$

$$35 - 5 \times \quad = \quad \times 5$$

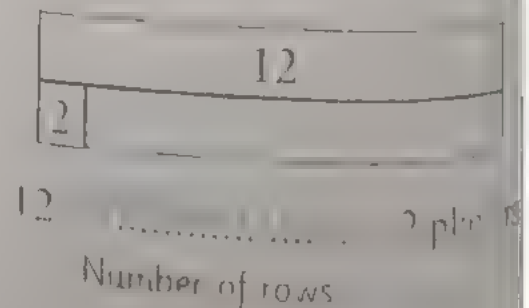
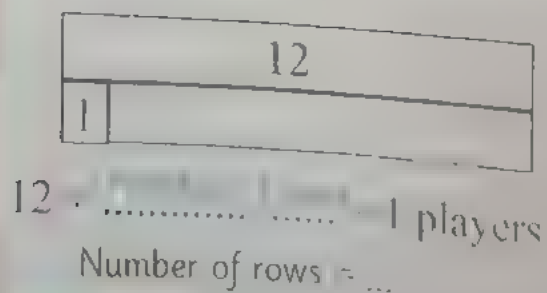
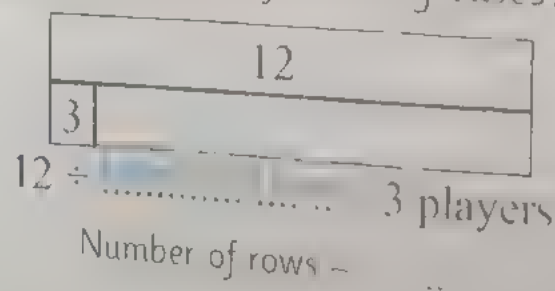
$$63 \div \quad = 7 \div 1$$

2 Read and complete:

If Shweta put 4 eggs in one dish, then :

The number of dishes that Shweta needs to put 28 eggs
 $= (28 \div \dots) = \dots$ dishes

3 A coach has stopped 12 players in different rows
 How many rows in the following cases?



Answer the following:

a $(4 \times 9) + 2 = (9 \times 4) + 2 = 36 + \dots = \dots$

b $(5 \times 7) - 5 = (7 \times \dots) - 5 = \dots = 30$

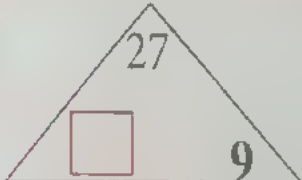
c $36 - (3 \times 9) = 36 - (9 \times \dots) = \dots - 27 = \dots$


d $(40 \div 5) + 2 = \dots + 2 = \dots$

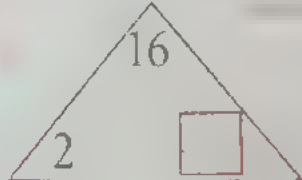
e $(19 - 14) \times 4 = 4 \times \dots = \dots$


f $(28 \div 4) \times 7 = \dots \times 7 = \dots$

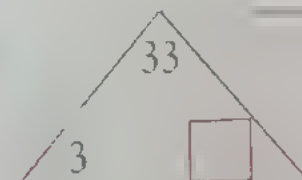
Find the missing factor and write the equation of the fact family



 $9 \times \dots = 27$ $\dots \times 9 = 27$
 $27 \div 9 = \dots$ $27 \div \dots = 9$


 $6 \times \dots = 36$ $\dots \times 6 = 36$
 $36 \div 6 = \dots$ $36 \div \dots = 6$


 $\dots \times 2 = 16$ $\dots \times \dots = 16$
 $16 \div \dots = \dots$ $16 \div \dots = \dots$


 $\dots \times 8 = 72$ $\dots \times \dots = 72$
 $72 \div \dots = \dots$ $72 \div \dots = \dots$


 $\dots \times 3 = 33$ $\dots \times \dots = 33$
 $33 \div \dots = \dots$ $33 \div \dots = \dots$


 $\dots \times 3 = 12$ $\dots \times \dots = 12$
 $12 \div \dots = \dots$ $12 \div \dots = \dots$



Complete:

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4}$$

$$\frac{1}{3} - \frac{2}{15} = \frac{4}{15} - \frac{2}{15}$$

$$\frac{1}{2} - \frac{5}{16} = \frac{8}{16} - \frac{5}{16}$$

$$\frac{1}{3} + \frac{2}{9} = \frac{3}{9} + \frac{2}{9}$$

$$\frac{1}{2} - \frac{3}{14} = \frac{7}{14} - \frac{3}{14}$$

$$\frac{3}{4} - \frac{7}{12} = \frac{9}{12} - \frac{7}{12}$$

$$\frac{1}{2} + \frac{1}{6} = \frac{3}{6} + \frac{1}{6}$$

$$\frac{3}{4} - \frac{11}{20} = \frac{15}{20} - \frac{11}{20}$$



Complete with the equivalent fraction:

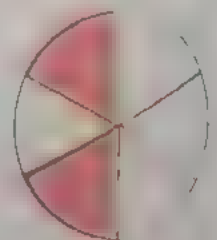
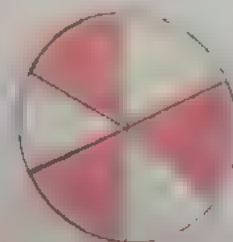
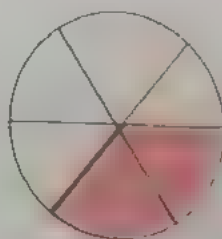
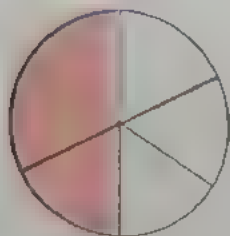
$$\frac{6}{9} = \frac{\textcircled{-3}}{\textcircled{-3}}$$

$$\frac{4}{16} = \frac{\textcircled{4}}{\textcircled{4}}$$

$$\frac{10}{25} = \frac{\textcircled{5}}{\textcircled{-5}}$$



Write the fraction then circle the fraction that equal to $\frac{1}{2}$.



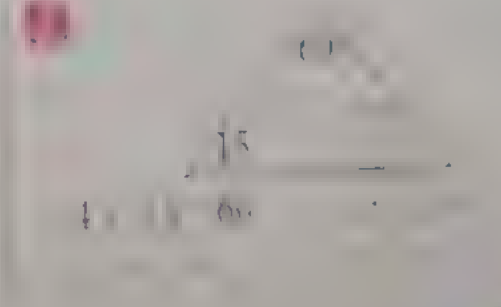
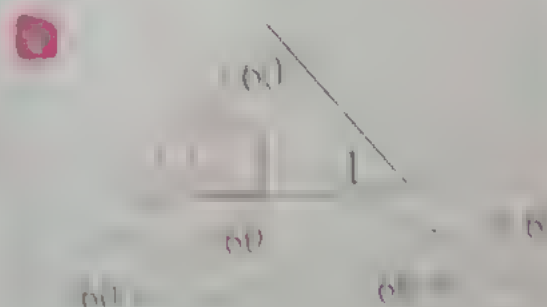
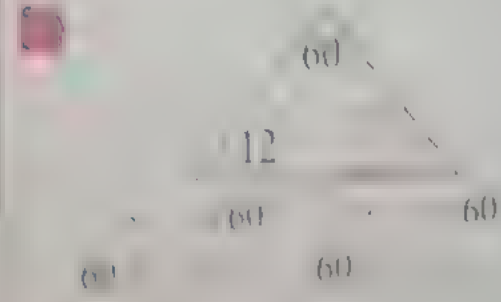
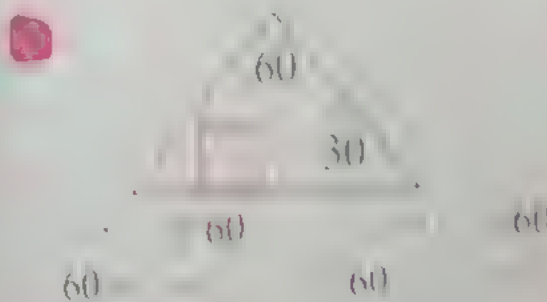
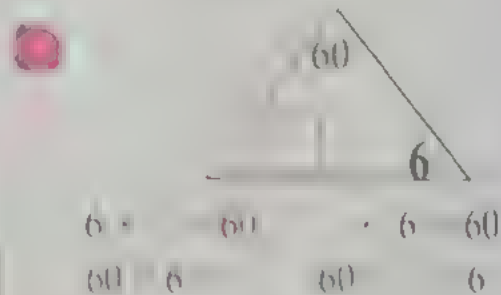
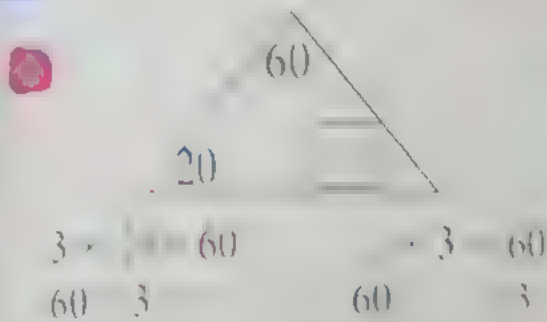
I have 24 oranges. Each person will get 4 oranges.
How many people can I feed?

Divide the rectangle into 6 parts equally,
then divide 24 on the parts equally.

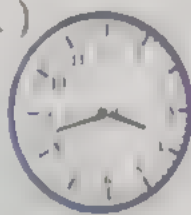


Number of person = 24 ÷ 4 = 6 person

Find the missing factor then complete the facts.



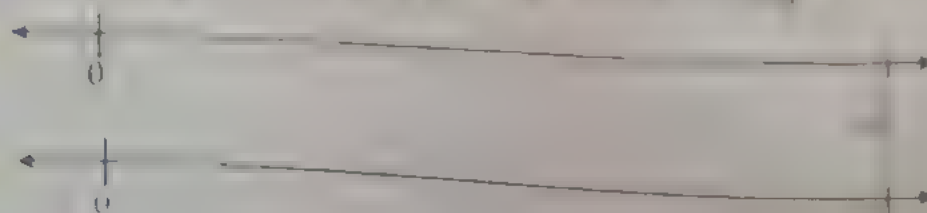
Choose the correct answer:

- a** $\frac{3}{5} > \frac{3}{4}$ (☐ $>$ ☐ $<$)
- b** $1\frac{4}{5}$ (☐ $1\frac{1}{5}$, ☐ $\frac{2}{5}$, ☐ $\frac{3}{5}$, ☐ $\frac{4}{5}$)
- c** No minutes in quarter an hour (20, 30, 15, 45)
- d** The perimeter of a square whose side length 100 cm (10, 100, 400, 200)
- e** The area of rectangle whose dimensions 3 m , 4 m (12, 7, 14, 24)
- f** $(4 \times 3) \times \dots = 60$ (12, 5, 7, 10)
- g** $9 \times 21 = 9 \times (\dots + 1)$ (10, 20, 3, 7)
- h** Read the clock :  (3:08 , 8:20 , 3:42 , 4:45)

Complete

- a** $\frac{3}{5} + \frac{1}{5}$ So $\frac{4}{5}$ $\frac{4}{5} = \frac{\quad}{\quad}$
- b** $\frac{2}{9} + \frac{3}{9}$ So $\frac{5}{9}$ $\frac{5}{9} = \frac{\quad}{\quad}$
- c** $1\frac{7}{8}$ So $1\frac{7}{8} + \frac{1}{8} = 1\frac{\quad}{\quad}$

Show using number line that 2 is more than 1.



Arrange the following fractions.

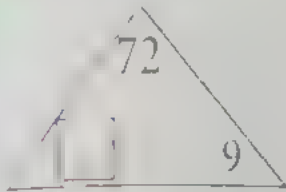
Ascendingly $\frac{1}{3}$ $\frac{1}{2}$ $\frac{1}{10}$ $\frac{1}{12}$ $\frac{1}{2}$

The order :

Descendingly : $\frac{3}{2}$ 1 $\frac{3}{5}$ $\frac{3}{8}$ $\frac{3}{4}$

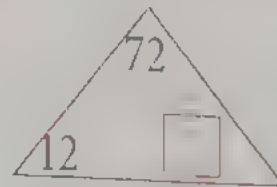
The order :

Find the missing factor then complete the fact family.



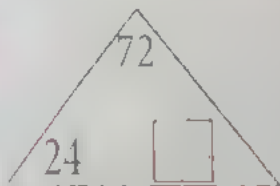
$$9 \times \square = 72 \quad \square \times 9 = 72$$

$$72 \div 9 = \square \quad 72 \div \square = 9$$



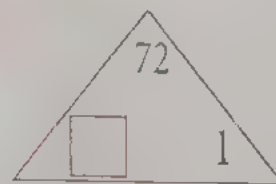
$$12 \times \square = 72 \quad \square \times 12 = 72$$

$$72 \div 12 = \square \quad 72 \div \square = 12$$



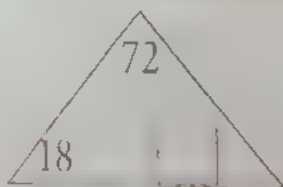
$$24 \times \square = 72 \quad \square \times 24 = 72$$

$$72 \div 24 = \square \quad 72 \div \square = 24$$



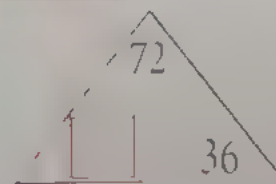
$$\square \times 1 = 72 \quad 1 \times \square = 72$$

$$72 \div 1 = \square \quad 72 \div \square = 1$$



$$18 \times \square = 72 \quad \square \times 18 = 72$$

$$72 \div 18 = \square \quad 72 \div \square = 18$$



$$36 \times \square = 72 \quad \square \times 36 = 72$$

$$72 \div 36 = \square \quad 72 \div \square = 36$$

Chapter Five



Vocabulary

The lamp post	مصباح	Bale	كيسة
Fluency	طلاقة	Hay	قش
Dividend	قسمة	Zookeeper	مربي حيوانات
Divisor	قسمة	Crocodile	تمسك
Fact family	عائلة الحقائق	Division	قسمة
Factor	عامل	Area	مساحة
Quotient	نسبة	Perimeter	محيط
Product	نتيجة	Average	متوسط
Equation	معادلة	Taro	تارو
Symbol	رمز	Square units	وحدات مربعة
Unknown	مجهول	Complex shape	شكل معقد
Multiplication	ضرب	Factor pairs	أزواج عوامل
Story problem	مسألة قصة	Constraints	قيود
Fluent	طلاقة	Dimensions	أبعاد
Rope	حبل	Accommodates	يستوعب

Content



Exercise
inspired from
Discover

Lesson (101 , 102)

Multiplication facts strategies

1 Remember :



Centimetre (cm) Centimetre (cm) use to measure short length .

Ex : Ruler of length 10 cm .



Meter (m) The meter (m) used to measure long length

Ex : The height of building 10 m ,

House room width 3 m , The height of the lamp post is 6 m



Millimetre (mm)

The millimetre (mm) used to measure very short lengths

Ex : The thickness of pencil 7 mm.



1 Centimetre = 10 mm or 1 cm = 10 mm

2 Centimetre = 20 mm , 5 cm = 50 mm

Practice Complete the following :

a 300 cm + m = 5 m

b 4 m + m = 7 m

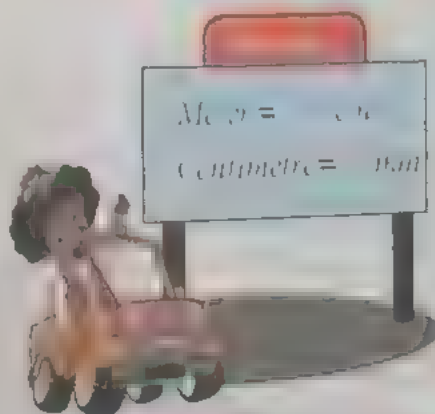
c 70 cm - cm = 60 cm

d 2 cm + mm = 8 cm

e 10 mm + mm = 40 mm

f 60 cm - cm = 30 cm

g 8 m - cm = 500 cm



Exercise 3 Complete as the EX



cm + 10 cm = 1 m + 10 cm

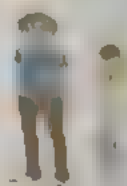
517 cm = cm + cm m cm

318 cm = cm cm m cm

690 cm = cm cm m cm

Exercise 4 Ahmed is cm long. Mohamed is increase by cm. What is the length of Mohamed?

Solution Mohamed length = Ahmed length + 4 cm
= cm + cm = ... cm.

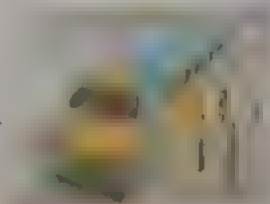


Exercise 5 The length of two pieces of cloth is m, the length of one of them is m. What is the length of the other piece?

Solution The length of the other pieces = ... - the length of the first
= m - m = m

Exercise 6 Two train the difference between their lengths is m. The length of one of them is m. What is the length of the short train?

Solution The length of the long - the length of the short =
the length of the short =
the length of the short = m.



Multiplication facts strategy

First (2s Count by 2s) : Skip count by 2

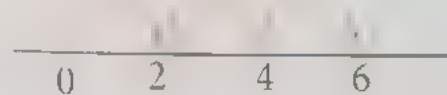
Know that the product is even number
or add the second factor to it self (multiple).

To find : 3×2 by skip count by strategy 2

Skip 2 three times as 2, 4, 6

$$3 \times 2 = 2 + \quad + \quad =$$

$$3 \times 2 = 3 + \quad =$$



Second (3s Double and add one more group) :

Find the multiples and add another sets .

To find 6×3 $6 \times 2 = 12$ add 6 to get 18

$$\begin{aligned} \text{Then : } 6 \times 3 &= 6 \times (2 + 1) \\ &= (6 \times 2) + (6 \times 1) = 12 + 6 = 18 \end{aligned}$$

Third (4s Double the Double) :

To find 8×4 $8 \times 2 = 16$ add 16 to 16 to get 32

$$\begin{aligned} \text{Then : } 8 \times 4 &= 8 \times (2 + 2) = (8 \times 2) + (8 \times 2) \\ &= 16 + 16 = 32 \end{aligned}$$

Fourth (5s Count by 5s) :

To find : 4×5 skip count by 5 four times :

$$\text{Then : } 4 \times 5 = 20$$

$$\text{🐼 } 4 \times 5 = 4 \times (3 + 2) = (4 \times 3) + (4 \times 2) = 12 + 8 = 20$$

$$\text{🐼 } 4 \times 5 = 4 \times (4 + 1) = (4 \times 4) + (4 \times 1) = 16 + 4 = 20$$

Fifth (6s Multiply by 5 and add one group) :

To find : 7×6 ~~NA~~ ~~FROM~~ $7 \times 5 = 35$ then add 7 to get

$$\text{Then : } 7 \times 6 = 7 \times (5 + 1) = (7 \times \quad) + (7 \times \quad) \\ = \quad + \quad =$$

Sixth (7s Multiply by 5 and 2 then add the products) :

To find : 7×7 ~~FROM~~ $7 \times 5 = 35$ and $7 \times 2 = 14$

Multiplying by 5 or 2 then add the products

$$\text{Then : } 7 \times 7 = 7 \times (5 + 2) = (7 \times \quad) + (7 \times \quad) \\ = \quad + \quad =$$

Seventh (8s Double 4s facts) :

To find : 6×8 ~~FROM~~ $6 \times 4 = 24$ and $24 + 24 =$

(If you're not sure about the multiples of facts of number 6)

Start with multiples of facts of number 2).

$$\text{Then : } 6 \times 8 = 6 \times (4 + 4) = (6 \times \quad) + (6 \times \quad) \\ = \quad + \quad =$$

Eighth (9s Finger trick from earlier lesson) :

To find 9×7 ~~FROM~~ $9 \times 5 = 45$ and $9 \times 2 = 18$

$$9 \times 7 = 9 \times (5 + 2) = (9 \times \quad) + (9 \times \quad) \\ = \quad + \quad =$$

Ninth (10s Add a 0 after the other factor) :

$$10 \times 3 = \quad \\ 10 \times 18 = 180 \\ 10 \times 125 = \quad$$

$$10 \times 29 = \quad \\ 10 \times 341 = \quad \\ 10 \times 211 = 2110$$

Tenth (11s Multiply by 10 then add one group) :

To find :

11×3 multiplying 10×3 then add 1×3 then the product = 33

Then : $11 \times 3 = (10 + 1) \times 3 = (\quad \times 3) + (\quad \times 3) = \quad + \quad = 33$

Eleventh (12s Tens facts plus 2s facts) :

To find :

12×4 multiply 10×4 then add 2×4 then the products = 48

Then : $12 \times 4 = (10 + 2) \times 4 = (\quad \times 4) + (\quad \times 4) = \quad + \quad = 48$

Activities from Math Journal

Activity Join by the missing number : Challenge : unknown numbers

I have zero in my ones place ,

50

one of my factors is 4 ,

4

I am double of 10 .

20

I have 6 different factors,

36

I have 1 in the tens place,

180

The number 6 is one of my factors .

12

If you double the tens digit you will get the ones digit

36

I'm the product of same two factors together,

18

one of my factor is equal to 12 .

42

Math

Self check on lesson (,)

1 Express the following lengths in centimetres as the

EX 4 meter 74 cm = 400 + 74 cm = 474 cm

5 meter, 20 cm = cm + cm = cm

2 meter, 17 cm = cm + cm = cm

9 meter, 5 cm = cm + cm = cm

2 Express the following lengths in centimetres as the

..... mm + cm - cm + cm - cm

70 mm + 10 cm = cm + cm = cm

10 mm + 5 cm = cm + cm = cm

50 mm - 3 cm = cm - cm = cm

3 Complete the following .

9 × 4 = 9 + 9 + + =

9 × 4 = 9 × (2 +) = (9 ×) + (9 ×) = +

or 9 × 4 = 9 × (3 +) = (9 ×) + (9 ×) = +

3 × 5 = 3 + 3 + + =

3 × 5 = 3 × (3 +) = (3 ×) + (3 ×) = 9 +

or 3 × 5 = 3 × (4 +) = (3 ×) + (3 ×) = +

Series

Primary

term

$$9 \times 6 = 9 \times (5 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 9 \times 6 = 9 \times (3 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 9 \times 6 = 9 \times (4 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$11 \times 7 = 11 \times (5 + \dots) = (11 \times \dots) + (11 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 11 \times 7 = 11 \times (6 + \dots) = (11 \times \dots) + (11 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 11 \times 7 = 11 \times (4 + \dots) = (11 \times \dots) + (11 \times \dots) = \dots + \dots = \dots$$

$$9 \times 8 = 9 \times (5 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 9 \times 8 = 9 \times (6 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 9 \times 8 = 9 \times (4 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots = \dots$$

$$5 \times 11 = 5 \times (10 + \dots) = (5 \times \dots) + (5 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 5 \times 11 = 5 \times (5 + \dots) = (5 \times \dots) + (5 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 5 \times 11 = 5 \times (8 + \dots) = (5 \times \dots) + (5 \times \dots) = \dots + \dots = \dots$$

$$6 \times 12 = 6 \times (7 + \dots) = (6 \times \dots) + (6 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 6 \times 12 = 6 \times (10 + \dots) = (6 \times \dots) + (6 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 6 \times 12 = 6 \times (6 + \dots) = (6 \times \dots) + (6 \times \dots) = \dots + \dots = \dots$$

$$8 \times 17 = 8 \times (\dots + 7) = (8 \times \dots) + (8 \times 7) = \dots + \dots = \dots$$

$$\text{or } 8 \times 17 = 8 \times (8 + \dots) = (8 \times \dots) + (8 \times \dots) = \dots + \dots = \dots$$

$$\text{or } 8 \times 17 = 8 \times (5 + \dots) = (8 \times \dots) + (8 \times \dots) = \dots + \dots = \dots$$

Activities from Math Journal

Activity 1 Solve the following multiplication :

Start by solving the facts you are fluent in first :

$9 \times 7 =$	$3 \times 1 =$	$9 \times 3 =$	$8 \times 5 =$
$12 \times 2 =$	$11 \times 7 =$	$3 \times 3 =$	$4 \times 5 =$
$8 \times 2 =$	$10 \times 10 =$	$10 \times 3 =$	$10 \times 5 =$
$6 \times 8 =$	$9 \times 5 =$	$5 \times 2 =$	$5 \times 3 =$
$11 \times 3 =$	$9 \times 4 =$	$8 \times 4 =$	$6 \times 6 =$
$8 \times 6 =$	$7 \times 1 =$	$9 \times 8 =$	$10 \times 8 =$
$10 \times 6 =$	$6 \times 2 =$	$7 \times 3 =$	$6 \times 4 =$
$12 \times 1 =$	$4 \times 2 =$	$3 \times 4 =$	$11 \times 5 =$
$8 \times 1 =$	$6 \times 5 =$	$9 \times 5 =$	$4 \times 1 =$
$8 \times 7 =$	$0 \times 12 =$	$1 \times 9 =$	$8 \times 3 =$

Activity 2 Emad and Foz each have a piece of rope .
Emad's rope is _____ cm long . Foz's rope is
15 cm longer than Emad's .
How long are their ropes all together ?

The length of _____ rope = the length of _____ rope + 15 cm
= _____ cm + _____ cm = _____ cm
The sum of the two pieces = _____ + _____ = _____ cm

Lesson (103 : 105)

Multiplication and division facts

- 1 The mass of an apple is 70 grams and the mass of an orange is 130 grams. If there are 4 apples and 4 oranges with Basma. What is the total mass of all the fruits?

First strategy 1

The mass of apples = $70 + 70 + 70 + 70 = 280$ gm

The mass of orange = $130 + 130 + 130 + 130 = 520$ gm

The mass all fruit = + = 800 gm

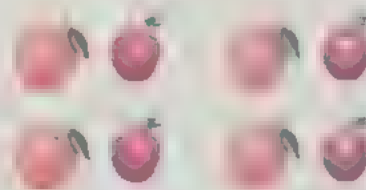


Second strategy 2

The mass of apple and orange

$$= 70 + 130 = 200 \text{ gm}$$

The mass of all fruit = $200 \times 4 = \dots\dots\dots$ gm

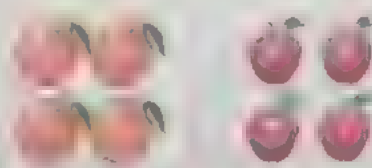


Third strategy 3

The mass of apples = $70 \times 4 = \dots\dots\dots$ gm

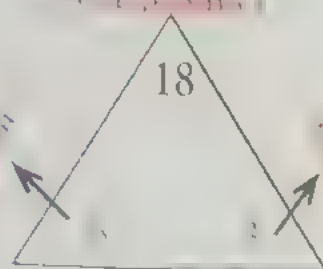
The mass of orange = $130 \times 4 = 10 \times (13 \times 4) = \dots\dots\dots$ gm

The mass of all fruit = + = gm

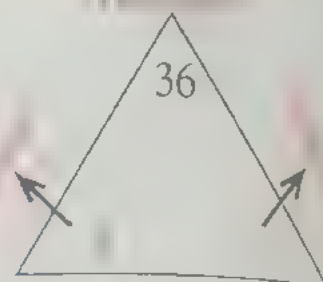


$$\begin{array}{r} 130 \times 4 = (10 + 3) \times 4 \\ = (10 \times 4) + (3 \times 4) \\ 40 + 12 = 52 \end{array}$$

2 Remember the facts of multiplication and division.



$$\begin{array}{ll} 3 \times 6 = 18 & 6 \times 3 = 18 \\ 18 \div 3 = 6 & 18 \div 6 = 3 \end{array}$$

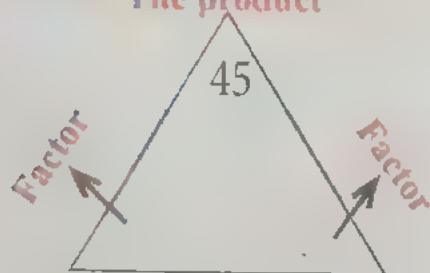


$$\begin{array}{ll} 9 \times 4 = 36 & 4 \times 9 = 36 \\ 36 \div 9 = 4 & 36 \div 4 = 9 \end{array}$$

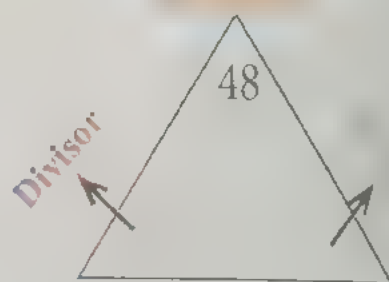
Practice

Complete the following :

The product



$$\begin{array}{ll} \times = & \times = \\ \div = & \div = \end{array}$$



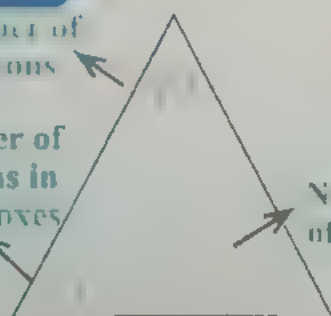
$$\begin{array}{ll} \times = & \times = \\ \div = & \div = \end{array}$$

3 I have 45 crayons. I want to put the crayons into boxes. Each box can hold 5 crayons. How many boxes will I need?

Number of crayons

Number of crayons in each boxes

Number of boxes



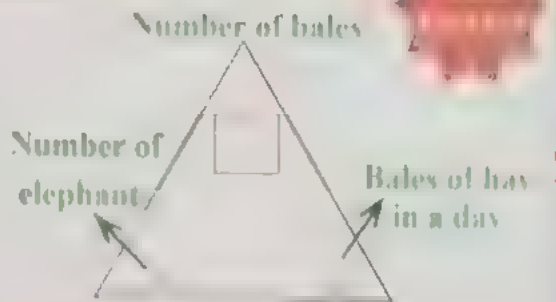
$$\begin{array}{r} 45 \div 5 = 9 \\ \text{I.e., Number of boxes} = 9 \end{array}$$

There are elephants at the zoo. Each elephant eats bales of hay in a day. How many bales of hay does the zookeeper need to feed all elephants for one day?

$$\times = \quad \times =$$

$$+ = \quad + =$$

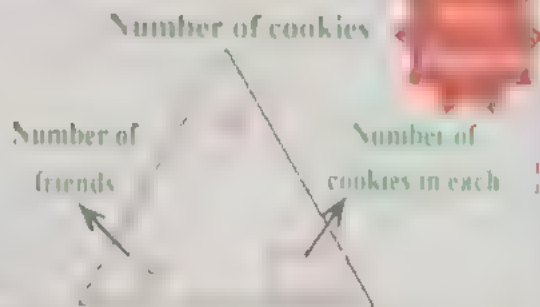
So: Number of bales = 9×2
bales.



Adam baked cookies. He gives a bag to of his friends. How many cookies are in each bag?

$$=$$

So: Number of cookies = $24 \div$
= cookies.



The zookeeper has fish. Each crocodile at the zoo gets fish. If all the crocodiles get fed, how many crocodiles are there at the zoo?

of crocodiles



Problem

The coach brought 28 soccer balls in a sack for training and there was 11 other balls on the shelf. If 11 balls were not used in training. How many balls were used in training?

Strategy ()

Number of all balls = $28 + 11 =$ ball
 Number of balls were used = $28 - 11 =$ ball



Strategy ()

Number of balls were used from =
 = ball
 Total of balls were used = $11 + 9 =$ ball

Activities from Math Journal

Activity Solve the following multiplication .

The problem		The answer
$7 \times 4 =$	Hessin bought 7 pencils , the price of each pencils 4 pounds How much does he pays ?	$7 \times 4 = 28$ pounds
$8 \times 9 =$		
$20 : 5 =$		

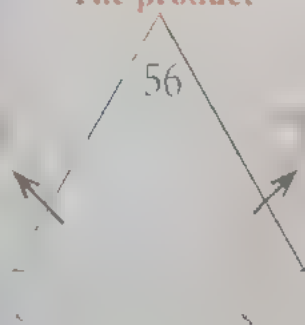
Self check on lesson (103-105)

1 Write story using the following operations then solve it

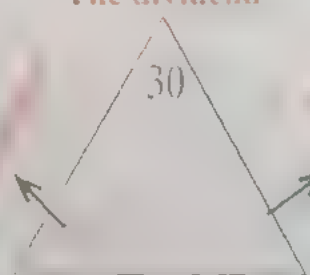
Problem	The Story	The solution
$6 \times 12 =$		
$36 : 6$		
$12 \cdot 4$		
$24 : 6$		

2 Complete :

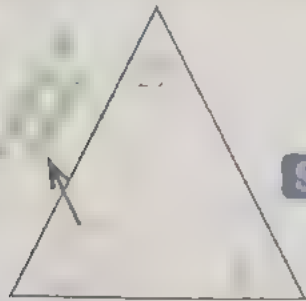
The product



The dividend

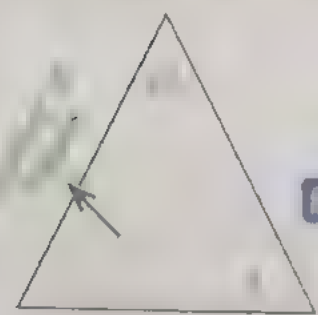


3. Adam and his friends walked to the zoo. The ticket cost 10 LE each. If Adam and his friends spend 100 LE all together, How many tickets did they buy?



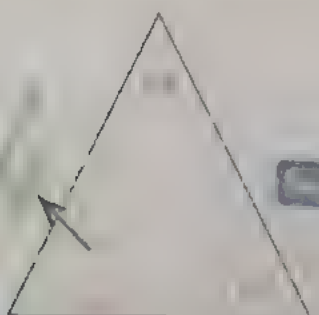
Solution Number of tickets = 10 tickets

4. At the hippo exhibit in the zoo, Adam and his friends count 120 feet. If every hippo has 4 feet, How many hippos are at the zoo?



Solution Number of hippos = 30 hippos

5. The zookeeper is giving a talk at an auditorium about peacocks. Adam and his friends go to listen. The auditorium can hold 120 people. If there are 10 rows, how many chairs are in each row?



Solution Number of chairs = 12 chairs

Lesson (106 : 110)

Applications on the area and the perimeter

1 Answer the following :

Start by solving the facts you are fluent in first

$1 \times 4 =$

$5 \times 10 =$

$8 \times 2 =$

$3 \times 7 =$

$3 \times 3 =$

$3 \times 5 =$

$9 \times 3 =$

$8 \times 6 =$

$12 \times 3 =$

$5 \times 1 =$

$4 \times 3 =$

$6 \times 2 =$

$5 \times 8 =$

$9 \times 9 =$

$8 \times 4 =$

$4 \times 4 =$

$10 \times 9 =$

$8 \times 3 =$

$9 \times 4 =$

$11 \times 7 =$

$5 \times 4 =$

$6 \times 6 =$

$2 \times 10 =$

$10 \times 4 =$

$12 \times 2 =$

$10 \times 1 =$

$7 \times 5 =$

$11 \times 4 =$

$7 \times 4 =$

$7 \times 7 =$

$2 \times 9 =$

$6 \times 9 =$

$10 \times 10 =$

$2 \times 6 =$

$5 \times 9 =$

$8 \times 8 =$

$7 \times 8 =$

$11 \times 8 =$

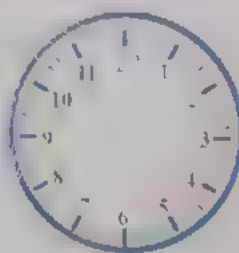
$7 \times 6 =$

$12 \times 5 =$

Draw the hands according to the time .



:



:



:

Math

2. Feroz measured his garden, and it is 2 meters wide and 4 meters long. Draw a model of Feroz's garden and label the dimensions.

Find: (a) The area

(b) The perimeter

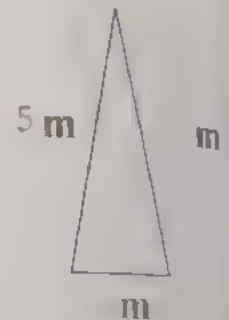
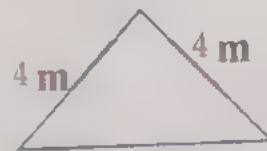
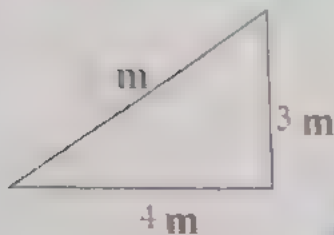
(c) If Feroz's garden is triangular shape with same perimeter.

Solution

The area = Length \times Width = $4 \times 2 = 8 \text{ m}^2$

The perimeter = (Length + Width) \times 2
 $= (4 + 2) \times 2 = 12 \text{ m}$

We can draw different triangles with perimeter 12 m as the following :



3 m, 4 m, 5 m

3. Genod draw a square has side lengths of 8 cm

Find: (a) The area

(b) The perimeter

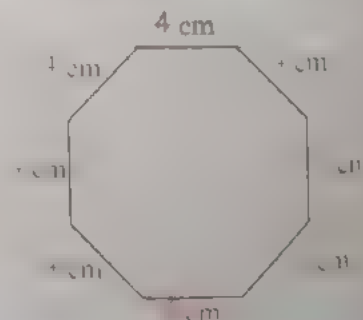
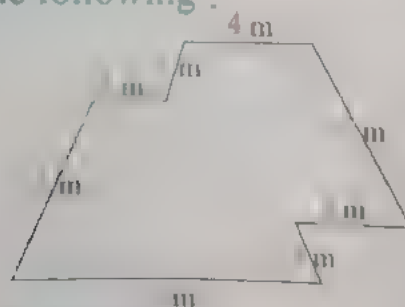
(c) Draw an octagon with the same perimeter

Solution

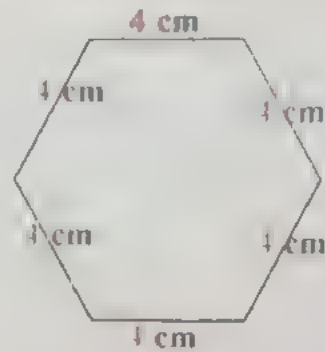
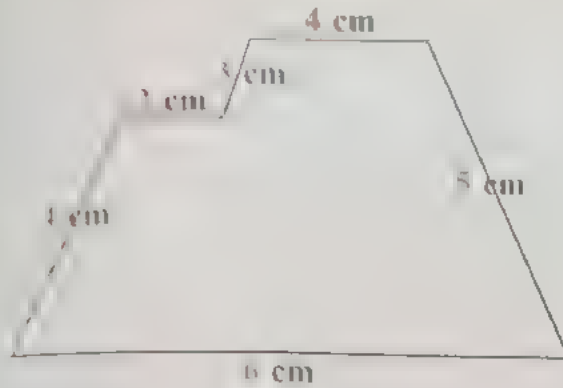
The area = Side length \times itself = $8 \times 8 = 64 \text{ cm}^2$

The perimeter = Side length \times 4 = $8 \times 4 = 32 \text{ cm}$

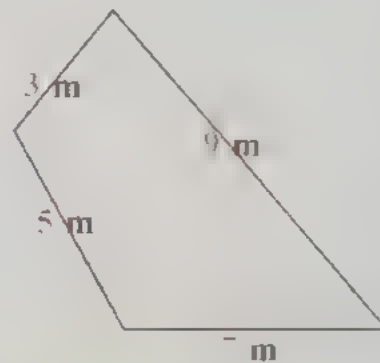
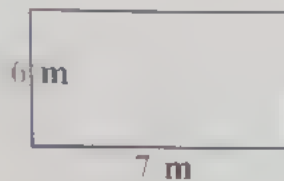
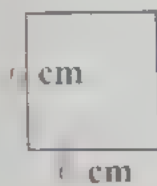
We can draw different Octagon with perimeter 32 cm as the following :



Activity 4 Manab draw a hexagon with a perimeter of 24 cm. Then draw a quadrilateral has the same perimeter.



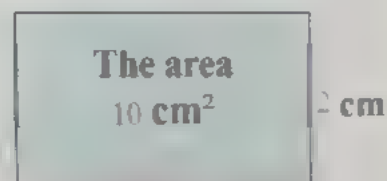
** We can draw more than a quadrilateral has the perimeter 24 as the following :



Problem 1 Find the length of the missing side :

a The length = Area \div width
 $= \dots \div \dots = \dots \text{ cm.}$

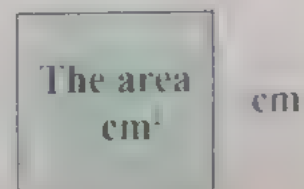
The perimeter = $(L + W) \times 2$
 $= (\dots + \dots) \times 2 = \dots \text{ cm.}$



b The area = side length \times itself
 $9 = \dots \times \dots$

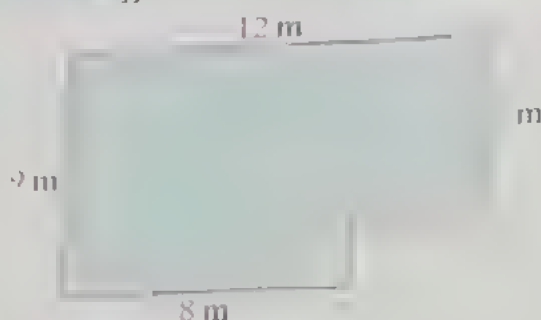
Then the side length = $\dots \text{ cm}$

The perimeter = Side length $\times 4$
 $= \dots \times 4 = \dots \text{ cm}$



Activity Park Math World

Activity 1 Find with different ways the area of the coloured part



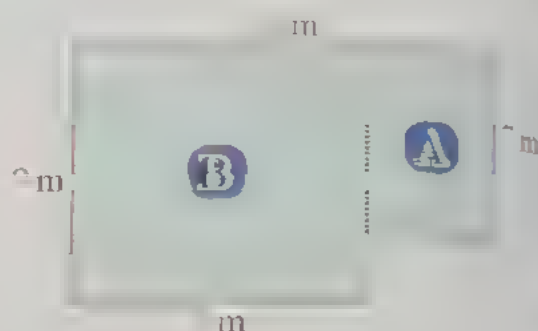
First strategy

Divide the shape into two parts,
then find the area of each part :

Area of **A** = $7 \times 4 = \dots\dots\dots \text{cm}^2$

Area of **B** = $8 \times 9 = \dots\dots\dots \text{cm}^2$

Area of shape = $28 + 72 = \dots\dots\dots \text{cm}^2$



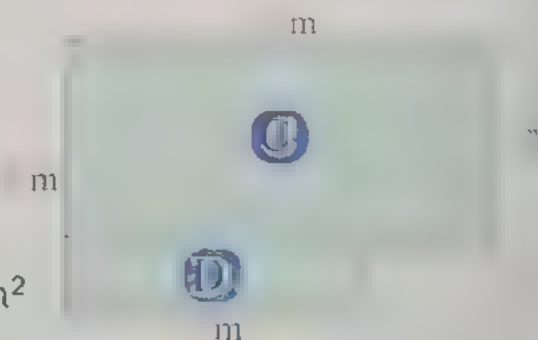
Second strategy

Divide the shape into two parts,
then find the area of each part :

Area of **C** = $7 \times 12 = \dots\dots\dots \text{cm}^2$

Area of **D** = $8 \times 2 = \dots\dots\dots \text{cm}^2$

Area of shape = $\dots\dots\dots + \dots\dots\dots = \dots\dots\dots \text{cm}^2$



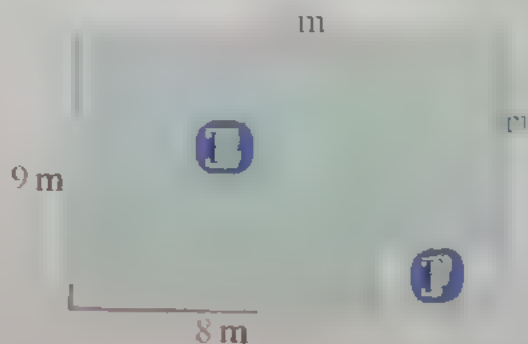
Third strategy

Divide the shape into two parts,
then find the area of each part :

Area of all shape = $9 \times 12 = \dots\dots\dots \text{cm}^2$

Area of **E** = $2 \times 4 = \dots\dots\dots \text{cm}^2$

Area of **F** = $\dots\dots\dots - \dots\dots\dots = \dots\dots\dots \text{cm}^2$



Self check on lesson (106 - 110)

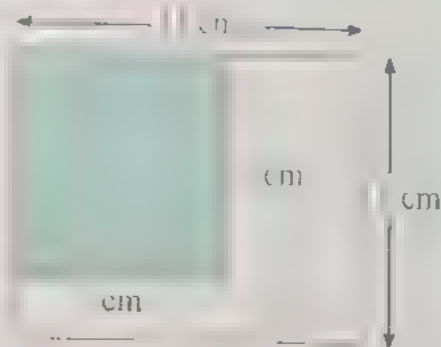
1 Find the area of the uncoloured shapes

Solution

Area of all shape = $\dots \times \dots = \text{cm}^2$

Area of the coloured shape
= $\dots \times \dots = \text{cm}^2$

Area of uncoloured part
= $\dots - \dots = \text{cm}^2$



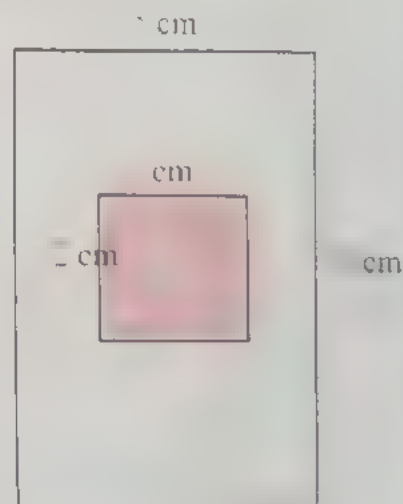
2 Find the area of the uncoloured shapes:

Solution

Area of all shape = $\dots \times \dots = \text{cm}^2$

Area of the coloured shape
= $\dots \times \dots = \text{cm}^2$

Area of uncoloured part
= $\dots - \dots = \text{cm}^2$



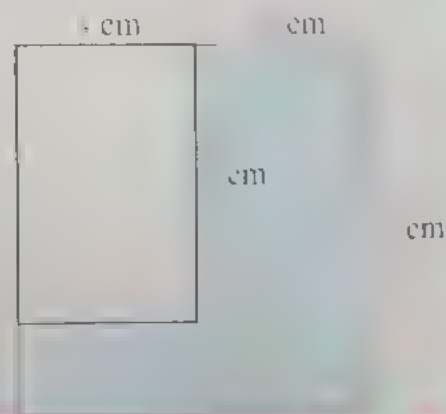
3 Find the area of the coloured part :

Solution

Area of all shape = $\dots \times \dots = \text{cm}^2$

Area of uncoloured part
= $\dots \times \dots = \text{cm}^2$

Area of the coloured shape
= $\dots - \dots = \text{cm}^2$





lyad measure the length of a square shaped piece of land with side 10 m , draw model to this pieces, then answer:

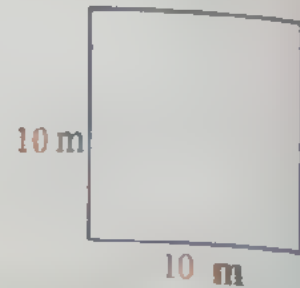
- (i) Find the perimeter. (ii) Find the area.
(iii) Draw another triangular model with same perimeter.

Solution

a Perimeter = $\dots \times 4 = \dots \text{ m}^2$

b Area = $\dots \times \dots = \dots \text{ m}^2$

c The possibilities triangle



First triangle

Second triangle



Toka draw rectangle with length 12 cm and 8 cm width. Draw a model then answer:

- (i) The area (ii) The perimeter.
(iii) Draw regular octagon with the same perimeter.

Solution

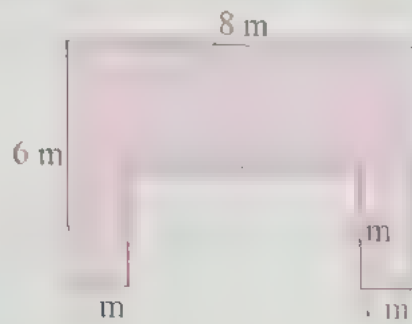
a The area = $\dots \times \dots = \dots \text{ m}^2$

b The perimeter = $\dots \times 4 = \dots \text{ m}^2$

c To draw octagon with perimeter \dots it's side will be $\dots \text{ cm}$

The regular octagon

6 Find the area of the following shape with different ways:



Method 1

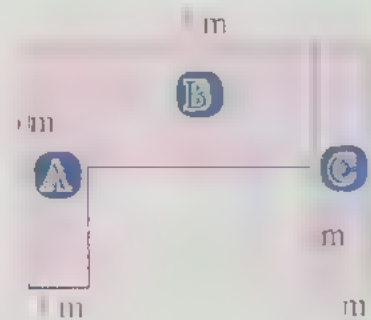
Divide the shape into 3 parts,
then find the area of each part

Area of **A** = $\quad \times \quad = \quad \text{cm}^2$

Area of **B** = $\quad \times \quad = \quad \text{cm}^2$

Area of **C** = $\quad \times \quad = \quad \text{cm}^2$

Area of shape = $\quad + \quad + \quad = \quad \text{cm}^2$



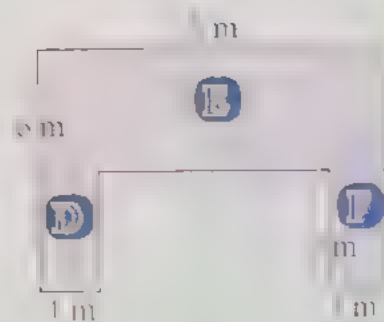
Divide the shape into 3 parts,
then find the area of each part .

Area of **D** = $\quad \times \quad = \quad \text{cm}^2$

Area of **E** = $\quad \times \quad = \quad \text{cm}^2$

Area of **F** = $\quad \times \quad = \quad \text{cm}^2$

Area of shape = $\quad + \quad + \quad = \quad \text{cm}^2$



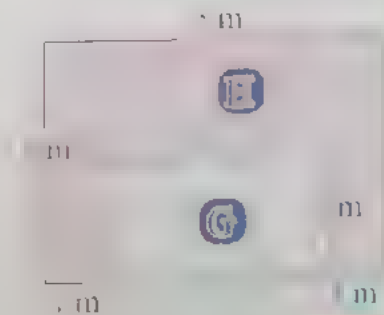
Divide the shape into 3 parts then,

Find the area of each part

Area of all shape = $\quad \times \quad = \quad \text{cm}^2$

Area of **G** = $\quad \times \quad = \quad \text{cm}^2$

Area of **H** = $\quad \times \quad = \quad \text{cm}^2$



1 Find the product :

$$9 \times 14 = 9 \times (10 + \quad) = (9 \times \quad) + (9 \times \quad)$$

$$6 \times 13 = 6 \times (6 + \quad) = (6 \times \quad) + (6 \times \quad)$$

$$12 \times 11 = 12 \times (5 + \quad) = (12 \times \quad) + (12 \times \quad)$$

2 Ham is 145 cm long, Habiba is 14 cm more than Ham.
Find the length of Habiba.

Solution

$$\begin{aligned} \text{Length of Habiba} &= \text{length of Ham} + \quad \text{cm} \\ &= \quad \text{cm} + \quad \text{cm} = \quad \text{cm} \end{aligned}$$



3 Two Trucks the difference between their lengths is 12 m.
the length of the longer is 12 m.
What is the length of the short Truck?

Solution

$$\begin{aligned} \text{The length of the longer} - \text{the length of the shorter} &= \quad \text{m} \\ \text{the length of the shorter} &= \quad \text{m} \\ \text{Then the length of the short} &= \quad \text{m} \end{aligned}$$

4 Find the area of the coloured part.

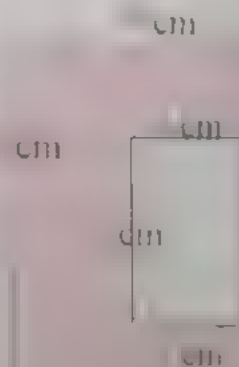
Solution

Area of uncoloured shape

$$= \quad \times \quad = \quad \text{cm}^2$$

$$\text{Area of all shape} = \quad \times \quad = \quad \text{cm}^2$$

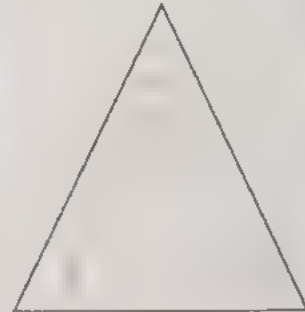
$$\begin{aligned} \text{Area of shaded part} &= \quad \\ &= \quad \text{cm}^2 \end{aligned}$$



- 5 My grandmother bought 3 taro seeds, each one for 4 pounds. How much did my grandmother pay for the whole taro?

Solution We know $3 \times 4 = 12$, $4 \times 3 = 12$

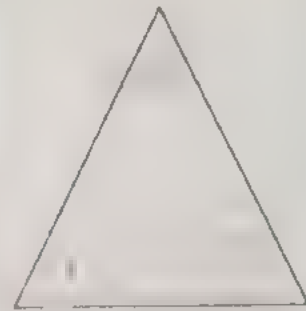
Then: the price of all taros = 12×1
= 12 pound.



- 6 Amr and his friends counted 24 feet to a group of goats at grandfather's farm. If every goat has 4 feet. How many goats did they see on the farm?

Solution We know $24 \div 4 = 6$, $4 \times 6 = 24$

Then: the number of all goats = $24 \div 4$
= 6 goat.



- 7 The average mass of a strawberry is 50 grams, and the average mass of a pepper is 120 grams. If Mary has 3 strawberries and 2 peppers, what is the total mass with her? (Use the strategy as your preference)

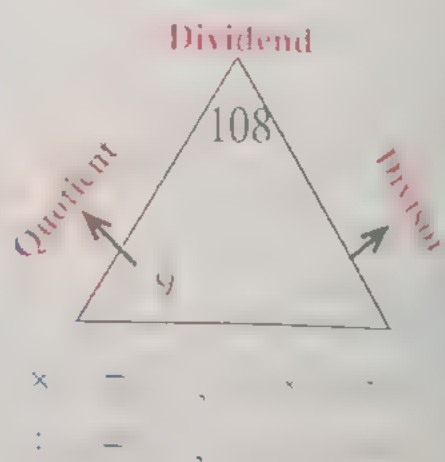
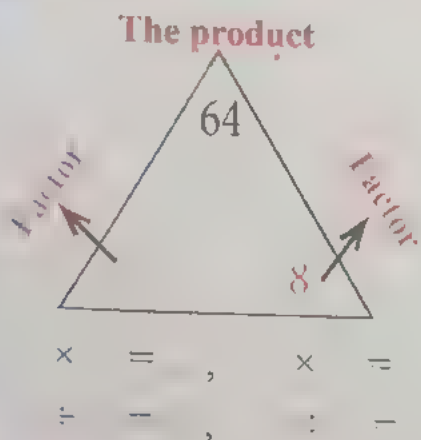
Solution



1 Complete :

$9 \times 13 = 9 \times (10 + \dots) = (9 \times \dots) + (9 \times \dots) = \dots + \dots =$
 $8 \times 11 = 8 \times (5 + \dots) = (8 \times \dots) + (8 \times \dots) = \dots + \dots =$
 $12 \times 12 = 12 \times (6 + \dots) = (12 \times \dots) + (12 \times \dots) = \dots + \dots =$

2 Complete :

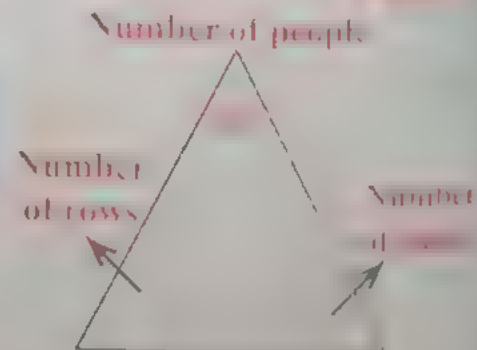


Samah and her friends went to the training room to watch a match basketball. The hall accommodates 60 person. If there are 5 rows, how many chairs are in each row ?



Answer:

$60 \div 5 =$
 $\div =$
 Then the number of chairs =
 - chair



- The teacher brought 36 cubes in a bag to make a house and he was there another 18 cubes in the classroom and didn't use the 20 cubes in the house? How many cubes were used in the composition of the house?

Solution



- Draw hands according to the time



6 : 12



3 : 27



7 : 44

- Find the area of the coloured part

Answer

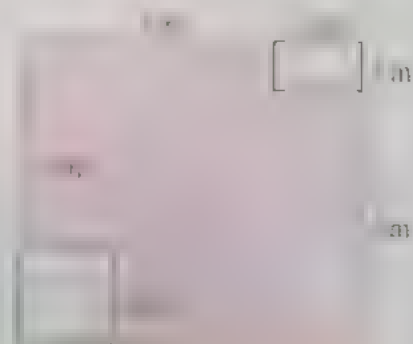
Area of uncoloured part

$$(\quad \times \quad) + (\quad \times \quad)$$

$$= \quad = \quad \text{m}^2$$

$$\text{Area of all shape} = \quad = \quad \text{m}^2$$

$$\text{Area of coloured part} = \quad = \quad \text{m}^2$$





Student name :

Phone number:

Vocabulary

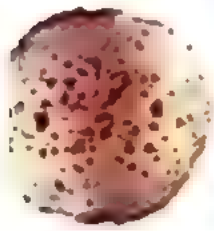
Fraction bar	شریط الكسر
Circle	دائرة
Include	يحتوي
Greater than	أكبر من
Less than	أقل من
Line plot	خط النقاط
Proper fraction	الكسر الحقيقي
Common	مشترك (متشابه)
Add	اجمع
Sum	مجموع
Difference	فرق
Subtract	اطرح
Compare	قارن
Eighths	اثمان
Equal parts	أجزاء متساوية
Fourths	أرباع
Addend	العناصر المجموعة
Bar model	نموذج الشرط
Perseverance	عزيمة
Review	مراجعة
Quotient	حاصل قسمة

Numerator	بسط
Equal	يساوي
Part	جزء
Fraction	كسر
Half	نصف
Fourth	ربع
Third	ثالث
Rectangle	مستطيل
Pie	فطيرة
Fractional parts	أجزاء كسرية
Halves	انصاف
Number line	خط الأعداد
Sixths	اسداس
Thirds	اثلث
Denominator	المقام
Unit fraction	وحدة الكسر
Factors	عوامل
Parentheses	أقواس
Product	نتاج الضرب
Equivalent	متكافئة
Associative	الدمج - التجميع
Property	خاصية



Half : $\frac{1}{2}$

Whole loaf



1

Whole loaf



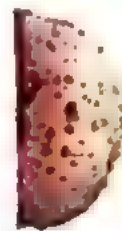
$\frac{2}{2}$

1 half

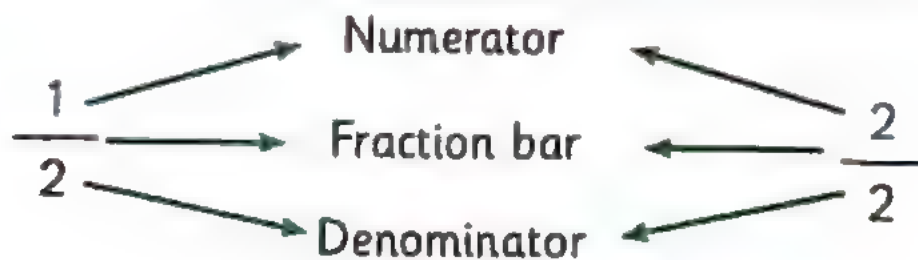


$\frac{1}{2}$

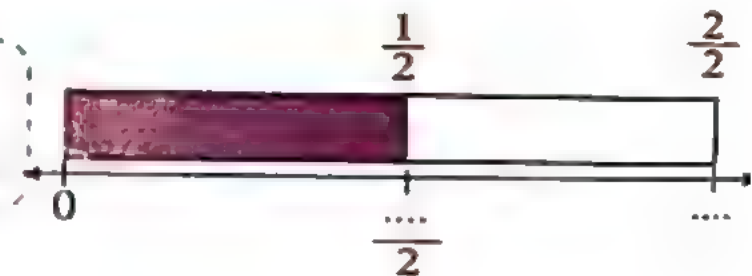
1 half



$\frac{1}{2}$



Draw a line under the $\frac{1}{2}$
fraction model then mark 0 and 1



Write the fraction :

The fraction that represent the number of girls = $\frac{1}{2}$

Numerator (Number of girls) \rightarrow 1
Denominator (all Number) \rightarrow 2



The fraction that represent the number of boys = $\frac{1}{2}$

The fraction that represent the number of children = $\frac{2}{2}$

Third : $\frac{1}{3}$

Whole loaf



1

Whole loaf



$\frac{3}{3}$

third



$\frac{1}{3}$

third

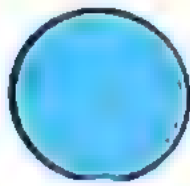


$\frac{1}{3}$

third



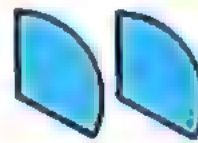
$\frac{1}{3}$



1



$\frac{3}{3}$

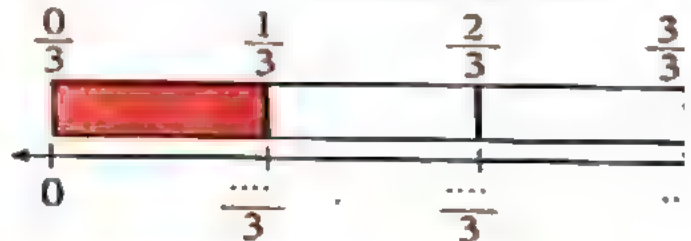


$\frac{2}{3}$



$\frac{1}{3}$

• Draw a line under the $\frac{1}{3}$ fraction model then mark .

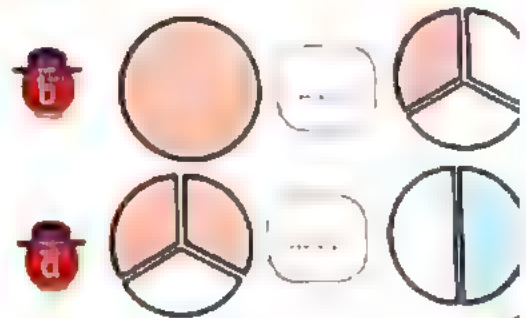
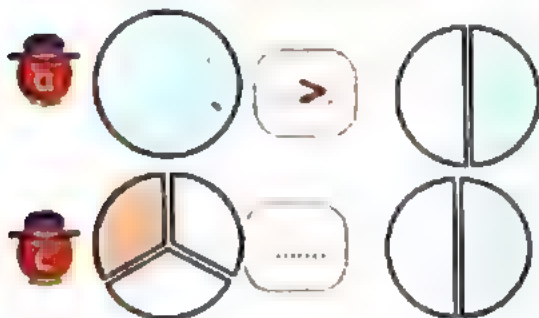


Practice * Write the fraction that represent the small bird :

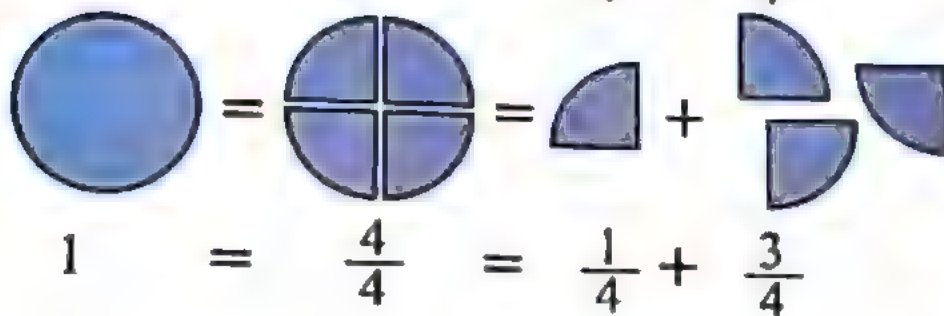
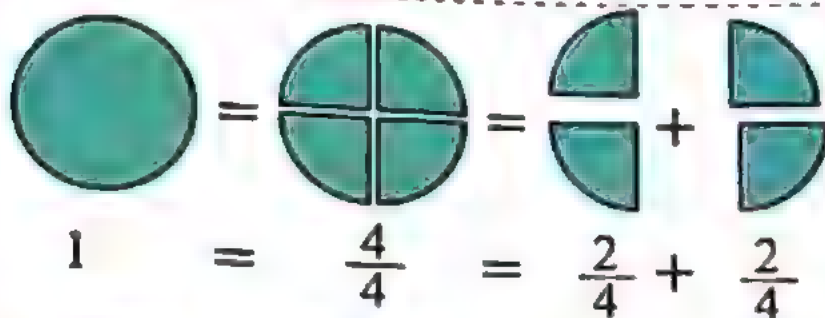
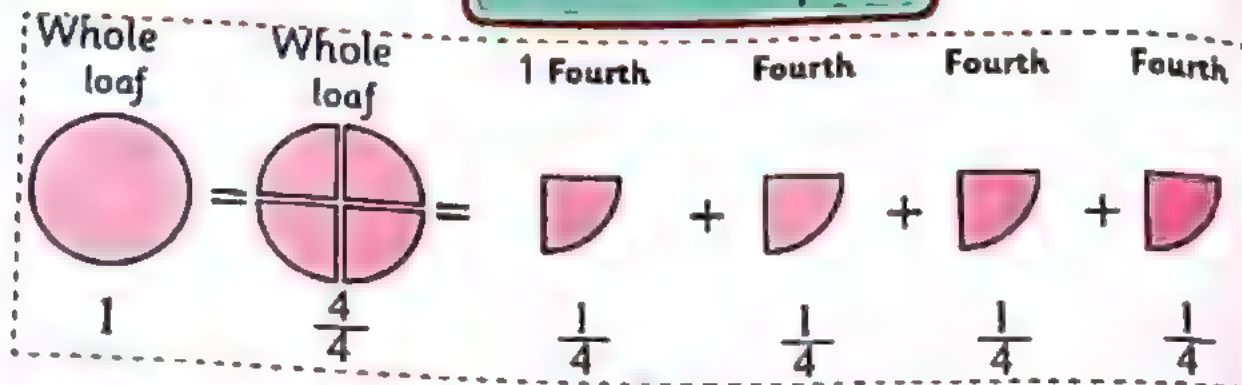
Numerator (Number of birds) \longrightarrow —
Denominator (all Number) \longrightarrow —



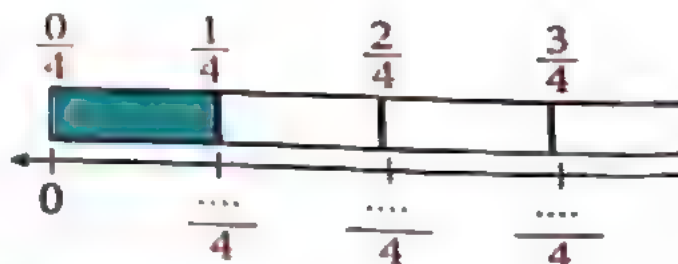
Practice * Complete by using ($>$, $=$, $<$) as the Ex :



Fourth : $\frac{1}{4}$



- Draw a line under the $\frac{1}{4}$ fraction model then mark.



Practice * Write the fraction :

a The fraction that represent the number of banana = $\frac{\dots}{4}$

Numerator (Number of banana) →


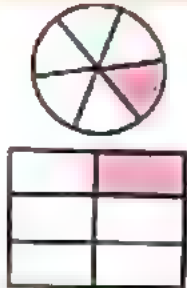
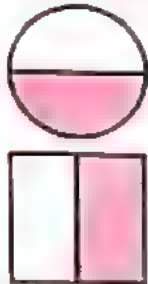
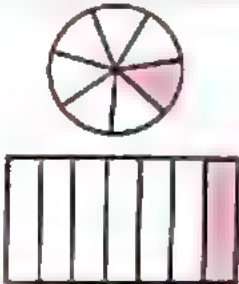
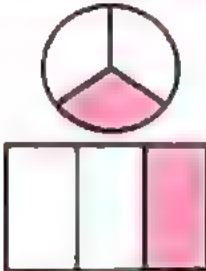
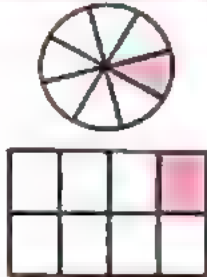
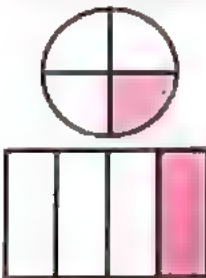
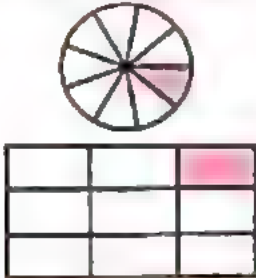
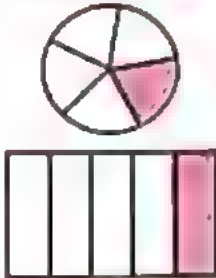
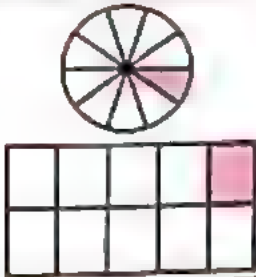
Denominator (all Number) →



b The fraction that represent the number of orange = $\frac{\dots}{4}$



Fraction as a part of whole 1

Part	Shape	Part	Shape
1 (Whole)		$\frac{1}{6}$ (Sixth)	
$\frac{1}{2}$ (Half)		$\frac{1}{7}$ (Seventh)	
$\frac{1}{3}$ (Third)		$\frac{1}{8}$ (Eighth)	
$\frac{1}{4}$ (Fourth)		$\frac{1}{9}$ (Ninth)	
$\frac{1}{5}$ (Fifth)		$\frac{1}{10}$ (Tenth)	

Practice * Complete as in (a) :

  $\frac{3}{4} \rightarrow$ The numerator is **3** , The denominator is **4**

  $\frac{2}{5} \rightarrow$ The numerator is **2** , The denominator is **5**

  $\frac{4}{9} \rightarrow$ The numerator is **4** , The denominator is **9**

  $\frac{6}{12} \rightarrow$ The numerator is **6** , The denominator is **12**

  $\frac{1}{2} \rightarrow$ The numerator is **1** , The denominator is **2**

Practice * Complete as in (a) :

 The numerator is **1** , The denominator is **3** $\rightarrow \frac{1}{3}$

 The numerator is **2** , The denominator is **5** $\rightarrow \frac{2}{5}$

 The numerator is **5** , The denominator is **8** $\rightarrow \frac{5}{8}$

 The numerator is **6** , The denominator is **9** $\rightarrow \frac{6}{9}$

 The numerator is **3** , The denominator is **10** $\rightarrow \frac{3}{10}$

The fraction = $\frac{\text{Number of required parts}}{\text{Number of all parts}}$

Practice * Complete :



1. The fraction that represent

is $\frac{\text{Number of } \text{black circles}}{\text{Number of } \text{black circles, yellow circle, red circle}} = \frac{2}{4}$

2. The fraction that represent

is $\frac{\text{Number of } \text{red circle}}{\text{Number of } \text{black circles, yellow circle, red circle}} = \frac{1}{4}$

Practice * Complete :



1. The fraction that represent

is $\frac{\text{Number of } \text{red star}}{\text{Number of } \text{red star, red star, black star}} = \frac{2}{3}$

2. The fraction that represent

is $\frac{\text{Number of } \text{black star}}{\text{Number of } \text{red star, red star, black star}} = \frac{1}{3}$

Practice * Complete :



1. The fraction that represent

is $\frac{\text{Number of } \text{red rectangles}}{\text{Number of } \text{red rectangles, blue rectangle, white rectangle}} = \frac{3}{5}$

2. The fraction that represent

is $\frac{\text{Number of } \text{blue rectangle}}{\text{Number of } \text{red rectangles, blue rectangle, white rectangle}} = \frac{1}{5}$

Practice * Kenzy bought one pizza , she divided it into 6 parts , she ate 4 parts of them , write the fraction .

(Solution) The fraction is



Practice * Complete :

(Solution)



The fraction for No. of girls is



The fraction for No. of boys is



The fraction for No. of children is



Practice * Amr has 8 balloons, 3 balloons of them are red , 2 balloons of them are green , complete :

(Solution)



The fraction for No. of red balloons is



The fraction for No. of green balloons is



Practice * Mariam had 6 pieces of biscuits , she ate 5 pieces , complete :

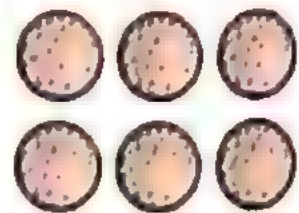
(Solution)



The fraction for No. that Mariam ate is



The fraction for No. that the remained is



Practice * Complete :



- a What is the fraction of the number of **red** pepper ?
- b What is the fraction of the number of **green** pepper ?
- c What is the fraction of the number of all pepper ?

Practice * Complete :



- a What is the fraction of the number of **red** Alarm clock ?
- b What is the fraction of the number of **blue** Alarm clock ?
- c What is the fraction of the number of all Alarms clock ?

Practice * Complete :



- a What is the fraction of the number of fish ?
- b What is the fraction of the number of bears ?
- c What is the fraction of the number of all animals ?

Practice * Colour that represent the fractions :



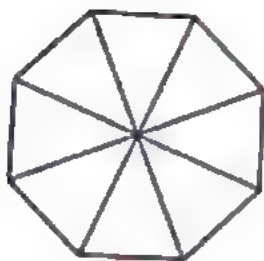
$$\frac{3}{4}$$



$$\frac{5}{7}$$



$$\frac{1}{3}$$



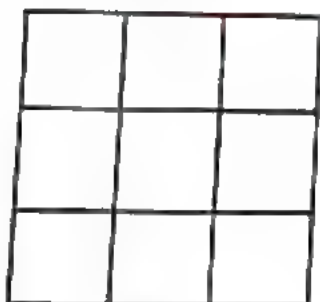
$$\frac{3}{8}$$



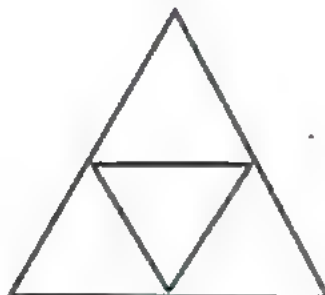
$$\frac{3}{5}$$



$$\frac{1}{4}$$



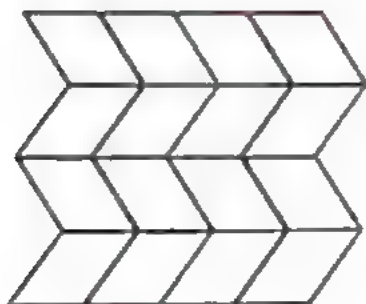
$$\frac{3}{9}$$



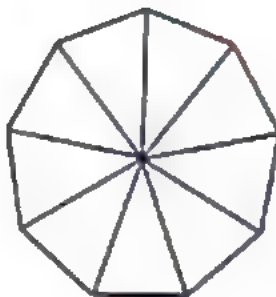
$$\frac{4}{4}$$



$$\frac{2}{6}$$



$$\frac{7}{16}$$



$$\frac{4}{9}$$



$$\frac{5}{8}$$



Practice * Write the fractions that represent the dot on the number line :



$\frac{3}{4}$



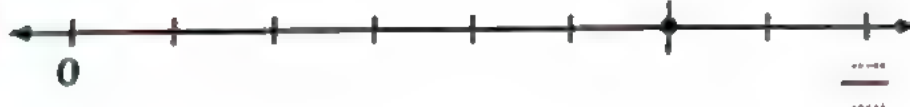
$\frac{5}{6}$



$\frac{6}{8}$



$\frac{2}{9}$



$\frac{6}{7}$



$\frac{4}{5}$

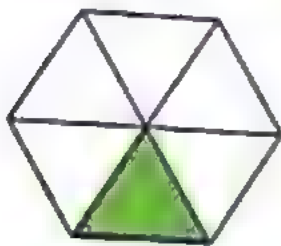


$\frac{3}{10}$



$\frac{5}{12}$

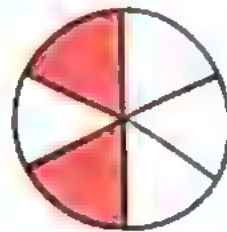
Practice Write the fractions that represent the coloured part :



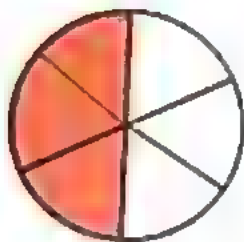
$\frac{1}{6}$



$\frac{2}{4}$



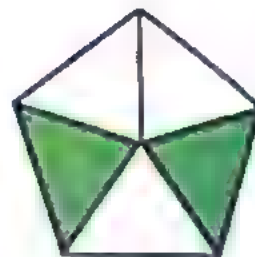
$\frac{3}{6}$



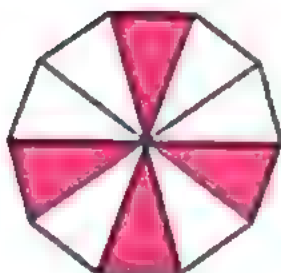
$\frac{3}{6}$



$\frac{1}{4}$



$\frac{2}{5}$



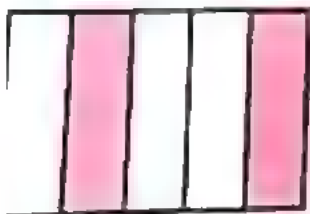
$\frac{4}{8}$



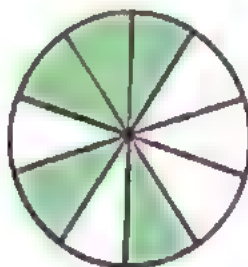
$\frac{7}{10}$



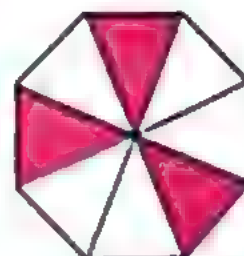
$\frac{1}{5}$



$\frac{2}{5}$



$\frac{5}{8}$



$\frac{4}{8}$

Practice * Write the fractions as in (a) :

 Five eighths = $\frac{5}{8}$

 Three sevenths = $\frac{3}{7}$

 Fourth = $\frac{1}{4}$

 Two fifths = $\frac{2}{5}$

 Two sixths = $\frac{2}{6}$

 Three fourths = $\frac{3}{4}$

 Five tenths = $\frac{5}{10}$

 Nine ninths = $\frac{9}{9}$

 Three sixths = $\frac{3}{6}$


 Two halves = $\frac{2}{2}$

 Five sevenths = $\frac{5}{7}$

 Seven eighths = $\frac{7}{8}$

Practice * Write the fractions in words as in (a) :

 $\frac{3}{7}$ = Three sevenths .

 $\frac{1}{4}$ = _____ .


 $\frac{5}{5}$ = _____ .

 $\frac{4}{9}$ = _____ .

 $\frac{1}{6}$ = _____ .


 $\frac{7}{8}$ = _____ .

 $\frac{5}{7}$ = _____ .

 $\frac{2}{3}$ = _____ .

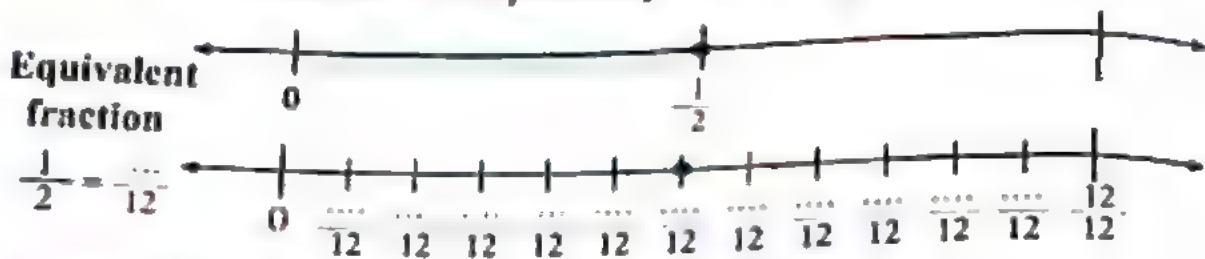
 $\frac{1}{3}$ = _____ .

 $\frac{7}{10}$ = _____ .

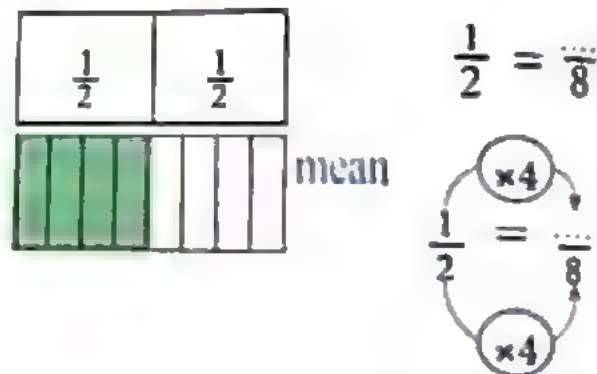
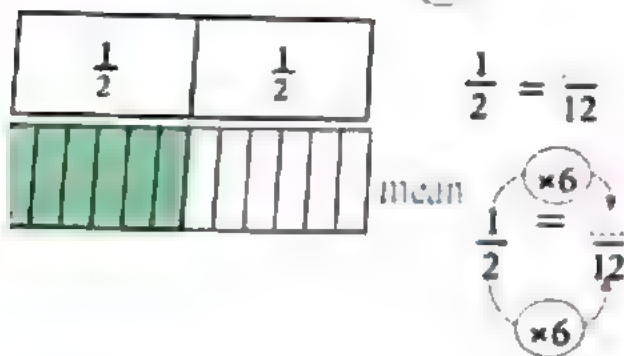
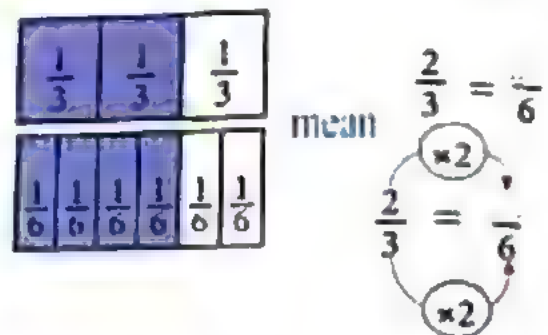
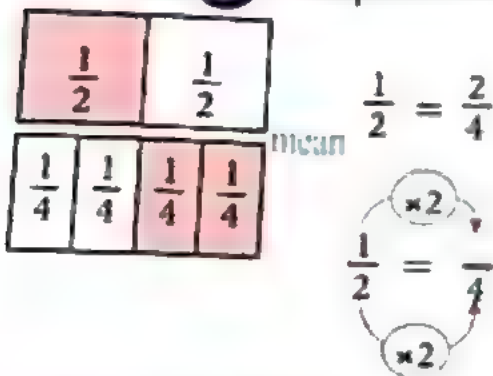
 $\frac{4}{8}$ = _____ .

 $\frac{1}{2}$ = _____ .

Practice * Divide the second number line into 12 equal parts, then write the equivalent fraction to $\frac{1}{2}$:



Practice * Complete the equivalent fraction:



Practice * Complete as the example to get equivalent fraction:

$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$

$\frac{1}{2} = \frac{1 \times 3}{2 \times 3} = \frac{3}{6}$


$\frac{1}{2} = \frac{1 \times 4}{2 \times 4} = \frac{4}{8}$

$\frac{1}{3} = \frac{1 \times 2}{3 \times 2} = \frac{2}{6}$

$\frac{1}{3} = \frac{1 \times 3}{3 \times 3} = \frac{3}{9}$


$\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{2}{8}$

Practice * Complete to get equivalent fraction as in (a) :

 $\frac{2}{14} = \frac{2}{6}$


÷2

÷2

 $\frac{5}{25} = \frac{\dots}{\dots}$


÷5

÷5

 $\frac{7}{35} = \frac{\dots}{\dots}$


÷7

÷7

 $\frac{6}{18} = \frac{\dots}{\dots}$


÷3

÷3

 $\frac{4}{8} = \frac{\dots}{\dots}$


÷2

÷2

 $\frac{3}{6} = \frac{\dots}{\dots}$


÷3

÷3

 $\frac{8}{16} = \frac{\dots}{\dots}$


÷4

÷4

 $\frac{9}{18} = \frac{\dots}{\dots}$

÷9


÷9


 $\frac{6}{24} = \frac{\dots}{\dots}$


÷6


÷6


Practice * Complete to get equivalent fraction as in (a) :


 $\frac{4}{6} = \frac{2}{3}$


 $\frac{5}{10} = \frac{\dots}{\dots}$


 $\frac{7}{14} = \frac{\dots}{\dots}$


 $\frac{3}{9} = \frac{\dots}{\dots}$


 $\frac{6}{16} = \frac{\dots}{\dots}$


 $\frac{5}{15} = \frac{\dots}{\dots}$


 $\frac{2}{8} = \frac{\dots}{\dots}$


 $\frac{3}{12} = \frac{\dots}{\dots}$


 $\frac{5}{20} = \frac{\dots}{\dots}$


 $\frac{2}{10} = \frac{\dots}{\dots}$

 $\frac{3}{15} = \frac{\dots}{\dots}$

 $\frac{4}{20} = \frac{\dots}{\dots}$

 $\frac{10}{30} = \frac{\dots}{\dots}$

 $\frac{6}{16} = \frac{\dots}{\dots}$

 $\frac{8}{16} = \frac{\dots}{\dots}$

Practice * Place the following fraction on the number line :



$\frac{1}{4}, \frac{3}{4}$



$\frac{1}{6}, \frac{1}{2}$



$\frac{1}{9}, \frac{1}{3}$



$\frac{1}{2}, \frac{1}{5}$



Practice * Arrange the following fraction :



$\frac{1}{5}, \frac{3}{5}, \frac{5}{5}, \frac{2}{5}$

In a descending order :



$\frac{5}{7}, \frac{1}{7}, \frac{2}{7}, \frac{7}{7}, \frac{6}{7}$

In an ascending order :



$\frac{2}{10}, \frac{5}{10}, \frac{9}{10}, \frac{8}{10}, \frac{3}{10}$

In a descending order :

Practice * Place the following fraction on the number line :



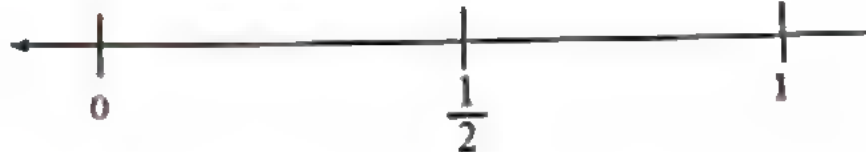
$\frac{3}{8}$



$\frac{4}{6}$



$\frac{3}{10}$



$\frac{2}{3}$



Practice * Arrange the following fraction :



$\frac{1}{3}, \frac{1}{12}, \frac{1}{7}, \frac{1}{9}$

In an ascending order :



$\frac{2}{3}, \frac{2}{2}, \frac{2}{8}, \frac{2}{6}, \frac{2}{4}$

In a descending order :



$\frac{3}{9}, \frac{3}{5}, \frac{3}{7}, \frac{3}{10}, \frac{3}{3}$

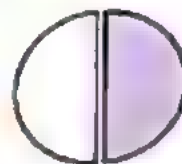
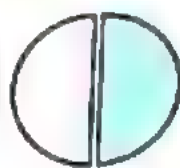
In a descending order :

Practice Complete by using ($>$, $=$, $<$) as the Ex :

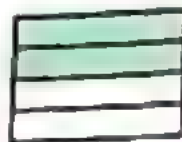
Ex:



$<$



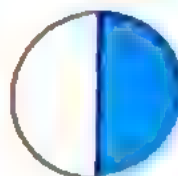
$=$



$=$



$=$



$=$

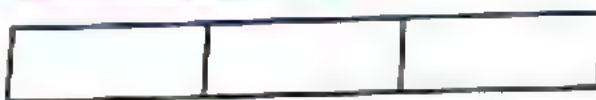


Practice Colour that represent the fractions , then arrange them :

$\frac{1}{2}$



$\frac{1}{3}$



$\frac{1}{4}$



$\frac{1}{6}$



$\frac{1}{8}$



The greatest part is $\frac{1}{2}$

The smallest part is $\frac{1}{8}$

Notice

The larger denominator, mean the smaller fraction in value

$$\frac{1}{2} > \frac{1}{3} > \frac{1}{4} > \frac{1}{6} > \frac{1}{8}$$

Practice Look note then put ($>$, $=$, $<$):



$\frac{1}{7}$



$\frac{1}{6}$



$\frac{1}{7}$



$\frac{1}{8}$



$\frac{1}{8}$



$\frac{1}{6}$



$\frac{1}{4}$



$\frac{1}{5}$



$\frac{1}{5}$

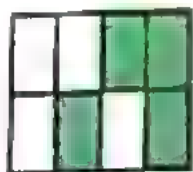


$\frac{1}{6}$



Practice Write the fraction then put ($>$, $<$, $=$):

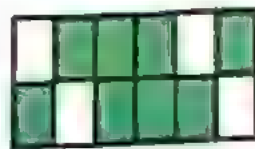
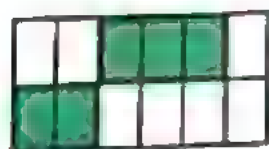
Remarks : When the denominators are equal the fraction with the smallest numerator is the smallest.



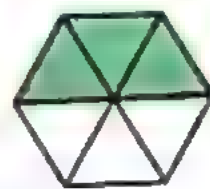
— ○ —



— ○ —

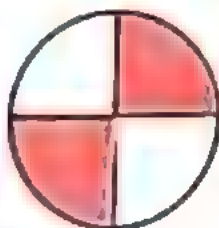
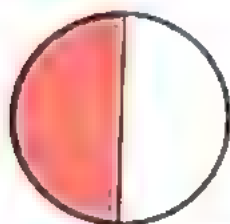


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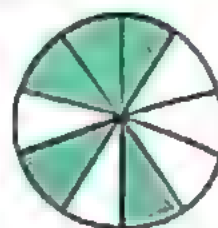
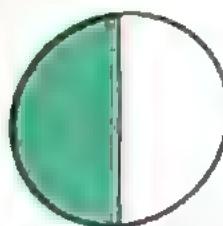


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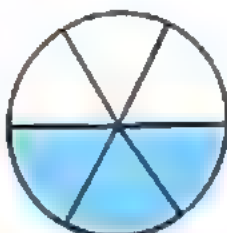
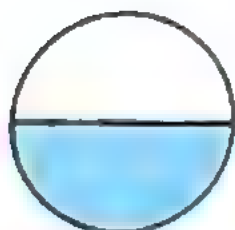
Practice Write the fraction according to the coloured parts :



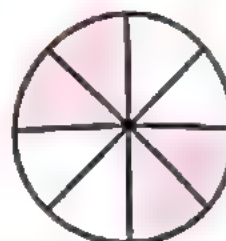
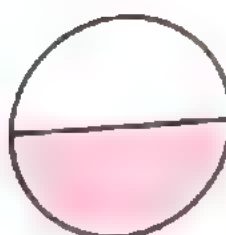
$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$



$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

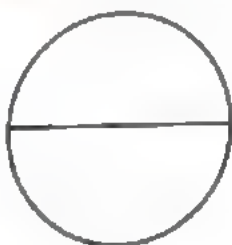


$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$



$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

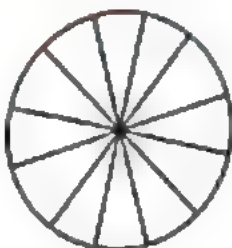
Practice Colour $\frac{1}{2}$ each model ,
then write the fraction under each one :



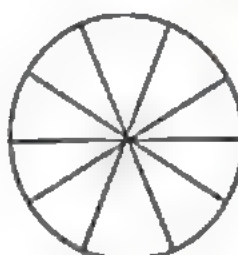
$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$



$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

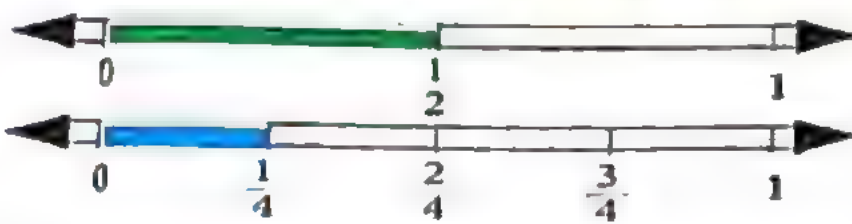


$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$



$$\frac{\quad}{\quad} = \frac{\quad}{\quad}$$

Practice * Compare between $\frac{1}{2}$ and $\frac{1}{4}$ on the number line :



$$1 = \frac{2}{2} = \frac{4}{4}$$

$$\frac{1}{2} > \frac{1}{4}$$

Practice * Compare between $\frac{1}{2}$ and $\frac{1}{3}$ on the number line:



$$1 = \frac{2}{2} = \frac{3}{3}$$

$$\frac{1}{2} > \frac{1}{3}$$

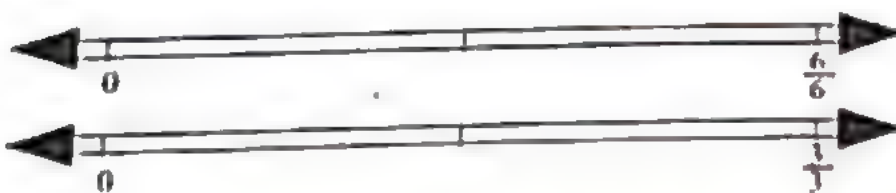
Practice * Compare between $\frac{1}{2}$ and $\frac{3}{4}$ on the number line:



$$1 = \frac{2}{2} = \frac{4}{4}$$

$$\frac{1}{2} < \frac{3}{4}$$

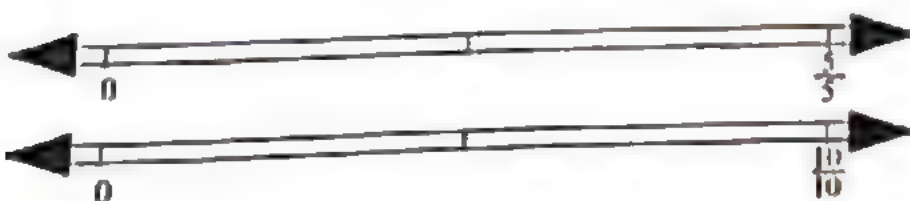
Practice * Compare between $\frac{1}{6}$ and $\frac{1}{3}$ on the number line:



$$1 = \frac{6}{6} = \frac{2}{2}$$

$$\frac{1}{6} < \frac{1}{3}$$

Practice * Compare between $\frac{1}{5}$ and $\frac{1}{10}$ on the number line:



$$1 = \frac{10}{10} = \frac{2}{2}$$

$$\frac{1}{5} > \frac{1}{10}$$

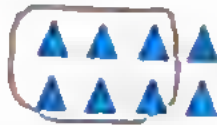
Practice * Compare between the two fractions $\frac{3}{5}$, $\frac{2}{5}$ using shapes.


 $\frac{3}{5}$

 $\frac{2}{5}$

So $\frac{3}{5} > \frac{2}{5}$

Practice * Compare between the two fractions $\frac{4}{8}$, $\frac{6}{8}$ using shapes:


 $\frac{4}{8}$

 $\frac{6}{8}$

So $\frac{6}{8} > \frac{4}{8}$

Practice * Compare between the two fractions $\frac{2}{5}$, $\frac{2}{7}$ using shapes:


 $\frac{2}{5}$

 $\frac{2}{7}$

So $\frac{2}{5} > \frac{2}{7}$

Practice * Compare between the two fractions $\frac{2}{3}$, $\frac{1}{3}$ using shapes:


 $\frac{2}{3}$

 $\frac{1}{3}$

So $\frac{2}{3} > \frac{1}{3}$

Practice * Compare between the two fractions $\frac{5}{5}$, $\frac{2}{6}$ using shapes:


 $\frac{5}{5}$

 $\frac{2}{6}$

So $\frac{5}{5} > \frac{2}{6}$

Adding two like fractions

Practice * Add using the model as in (a) :

a $\frac{3}{7} + \frac{2}{7} = \frac{\dots\dots\dots}{7}$



Notice all denominators are like

** Add numerators only

Then : $\frac{3}{7} + \frac{2}{7} = \frac{5}{7}$

b $\frac{2}{4} + \frac{1}{4} = \frac{\dots\dots\dots}{4}$

** Add numerators only



c $\frac{2}{5} + \frac{3}{5} = \frac{\dots\dots\dots}{5}$

** Add numerators only



d $\frac{1}{8} + \frac{4}{8} = \frac{\dots\dots\dots}{8}$

** Add numerators only



e $\frac{5}{11} + \frac{3}{11} = \frac{\dots\dots\dots}{11}$

** Add numerators only



f $\frac{1}{6} + \frac{2}{6} = \frac{\dots\dots\dots}{6}$

* Add numerators only



g $\frac{1}{3} + \frac{2}{3} = \frac{\dots\dots\dots}{3}$

** Add numerators only



h $\frac{5}{12} + \frac{6}{12} = \frac{\dots\dots\dots}{12}$

* Add numerators only



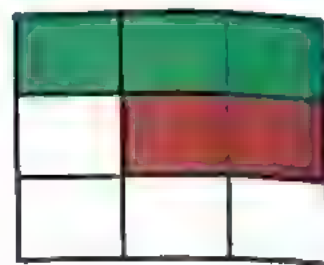
i $\frac{3}{10} + \frac{3}{10} = \frac{\dots\dots\dots}{10}$

** Add numerators only



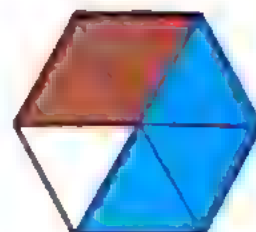
Practice * Complete as the Ex :

- The green part represents = $\frac{3}{9}$
- The red part represents = $\frac{6}{9}$
- The coloured parts = $\frac{3}{9} + \frac{6}{9} = \frac{9}{9}$



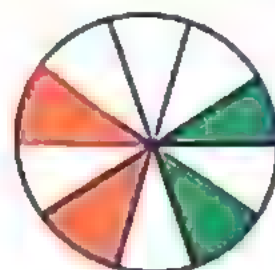
Practice * Complete as the Ex :

- The red part represents = $\frac{\dots}{\dots}$
- The blue part represents = $\frac{\dots}{\dots}$
- The coloured parts = $\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$



Practice * Complete as the Ex :

- The green part represents = $\frac{\dots}{\dots}$
- The orange part represents = $\frac{\dots}{\dots}$
- The coloured parts = $\frac{\dots}{\dots} + \frac{\dots}{\dots} = \frac{\dots}{\dots}$



Practice * Add the following :

a $\frac{5}{11} + \frac{1}{11} = \frac{\dots}{\dots}$

b $\frac{3}{8} + \frac{4}{8} = \frac{\dots}{\dots}$

c $\frac{2}{5} + \frac{3}{5} = \frac{\dots}{\dots}$

d $\frac{1}{7} + \frac{6}{7} = \frac{\dots}{\dots}$

e $\frac{1}{9} + \frac{3}{9} = \frac{\dots}{\dots}$

f $\frac{1}{10} + \frac{1}{10} = \frac{\dots}{\dots}$

g $\frac{5}{6} + \frac{1}{6} = \frac{\dots}{\dots}$

h $\frac{1}{4} + \frac{2}{4} = \frac{\dots}{\dots}$

Subtracting like fraction

Practice * Subtract using the model as in (a) :

$$\frac{5}{8} - \frac{2}{8} = \frac{\dots}{8}$$

•• Subtract the numerators only



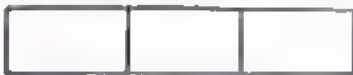
Notice all denominators are like

•• Subtract the numerators only

$$\text{So } \frac{5}{8} - \frac{2}{8} = \frac{3}{8}$$

$$\frac{3}{3} - \frac{1}{3} = \frac{\dots}{3}$$

•• Subtract the numerators only



$$\frac{4}{6} - \frac{3}{6} = \frac{\dots}{6}$$

•• Subtract the numerators only



$$\frac{5}{7} - \frac{2}{7} = \frac{\dots}{7}$$

•• Subtract the numerators only



$$\frac{9}{10} - \frac{4}{10} = \frac{\dots}{10}$$

•• Subtract the numerators only



$$\frac{6}{8} - \frac{1}{8} = \frac{\dots}{8}$$

•• Subtract the numerators only



$$\frac{8}{11} - \frac{6}{11} = \frac{\dots}{11}$$

•• Subtract the numerators only



$$\frac{7}{12} - \frac{3}{12} = \frac{\dots}{12}$$

•• Subtract the numerators only




$$\frac{3}{4} - \frac{1}{4} = \frac{\dots}{4}$$


•• Subtract the numerators only




Practice * Subtract as the Ex :

Ex: $1 - \frac{3}{4} = \frac{4}{4} - \frac{3}{4} = \frac{1}{4}$

 $1 - \frac{3}{5} = \quad - \frac{3}{5} =$

 $1 - \frac{5}{6} = \quad - \frac{5}{6} =$

 $1 - \frac{1}{8} = \quad - \frac{1}{8} =$

 $1 - \frac{4}{7} = \dots - \frac{4}{7} =$

 $1 - \frac{2}{3} = \quad - \frac{2}{3} =$

 $1 - \frac{7}{9} = \dots - \frac{7}{9} =$

Practice * Subtract :


 $\frac{4}{6} - \frac{1}{6} = \dots$

 $\frac{7}{8} - \frac{3}{8} = \dots$

 $\frac{7}{9} - \frac{5}{9} = \dots$

 $\frac{9}{10} - \frac{3}{10} = \dots$


 $\frac{6}{11} - \frac{2}{11} = \dots$


 $\frac{3}{4} - \frac{2}{4} = \dots$


 $\frac{2}{4} - \frac{1}{4} = \dots$


 $\frac{4}{5} - \frac{1}{5} = \dots$


Practice * Complete the following :


 $\frac{1}{2} + \frac{1}{4} = \quad + \frac{1}{4} =$


 $\frac{1}{3} + \frac{4}{15} = \dots + \frac{4}{15} = \dots$


 $\frac{1}{2} + \frac{1}{6} = \quad + \frac{1}{6} =$

 $\frac{1}{3} + \frac{1}{9} = \dots + \frac{1}{9} = \dots$

 $\frac{1}{2} + \frac{3}{8} = \quad + \frac{3}{8} =$

 $\frac{3}{4} + \frac{5}{12} = \dots + \frac{5}{12} = \dots$

 $\frac{1}{2} + \frac{2}{14} = \quad + \frac{2}{14} =$

 $\frac{3}{5} + \frac{3}{10} = \dots + \frac{3}{10} = \dots$

Practice * Dalia has 16 Lemons to distribute them equally to her friends , Complete :

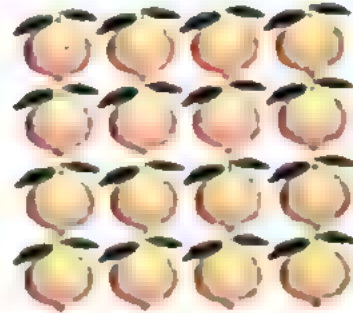
1 If he splits the Lemons equally between 2 friends :

Solution Divide the Lemons on the friends

$$16 \div 2 = \text{Lemons}$$

So Number of Lemons for each one = 8

The fraction that expresses the share of each one = $\frac{\dots}{\dots}$



2 If he distribute the Lemons equally between 4 friends :

Solution Divide the Lemons on the friends

$$\div = \text{Lemons}$$

So Number of Lemons for each one =

The fraction that expresses the share of each one = $\frac{\dots}{\dots}$



3 If he distribute the Lemons equally between 8 friends :

Solution Divide the Lemons on the friends

$$\div = \text{Lemons}$$

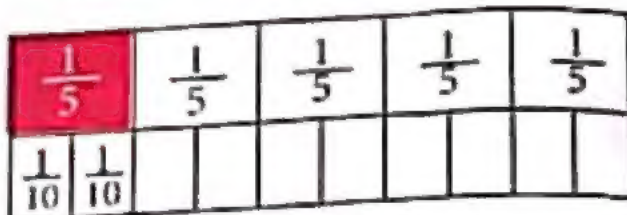
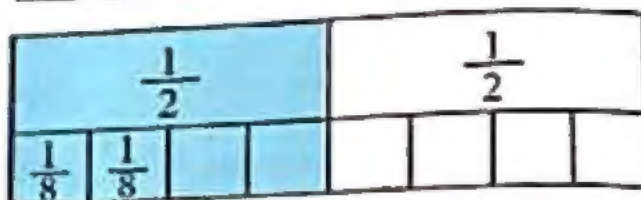
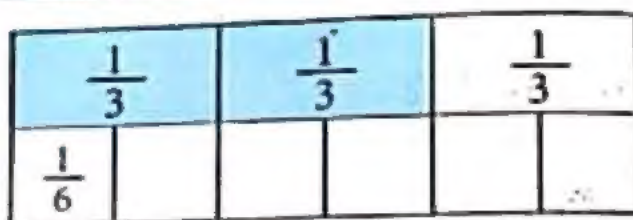
So Number of Lemons for each one =

The fraction that expresses the share of each one = $\frac{\dots}{\dots}$



Remember that

We divide the number of all parts by the denominator.

Practice Complete :**a** $\frac{1}{5}$ has tenths.**b** $\frac{1}{2}$ has eighths**c** $\frac{2}{3}$ has sixths**Practice** Complete as in (a) :**a** If $\frac{1}{2}$ a bag of balloons equal 6 balloonsThen number of all balloons = $2 \times 6 = 12$ balloons.**b** If $\frac{1}{4}$ a bag of biscuit equal 5 piecesThen number of all biscuit = $5 \times \dots = \dots$ pieces**c** If $\frac{1}{3}$ a box of mineral water equal 4 bottlesThen number of bottles in a box = $4 \times \dots = \dots$ bottles**d** If $\frac{1}{5}$ of pens in the box equal 2 penThen number of pens in the box = $2 \times \dots = \dots$ pens**e** If $\frac{1}{7}$ of kilogram of oranges = 1 orangesThen A kilogram of oranges = $1 \times \dots = \dots$ oranges

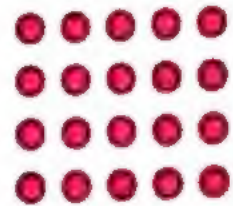
Practice * What is half of 16 ? :



Divide 16 elements on ... sets

Number of elements in each set =

Then half of 16 equal



Half of 16 equal $16 \div 2 =$

Practice * Using divide find the following as in (a) :



What is $\frac{1}{2}$ of 12 ?

Solution : $12 \div 2 = 6$



What is $\frac{1}{4}$ of 16?

Solution : $16 \div \dots = \dots$



What is $\frac{1}{2}$ of 8?

Solution : $8 \div \dots = \dots$



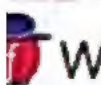
What is $\frac{1}{3}$ of 9?

Solution : $9 \div \dots = \dots$



What is $\frac{1}{5}$ of 15?

Solution : $15 \div \dots = \dots$



What is $\frac{1}{7}$ of 21?

Solution : $21 \div \dots = \dots$

Practice Which is greater :
half family (a) or half family (b) :

(Solution

Family ^B
has 6 members

>

Family
has members

Half family ^B
has members

>

Half family
has members

(A)



Practice Complete :



Weight of watermelon Weight of mango



Half the weight of watermelon half the weight of mango

Practice Complete using (> , = , <) :

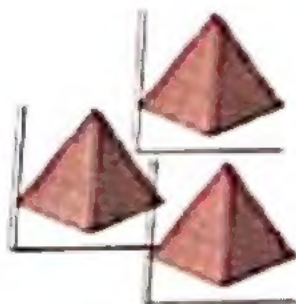


Figure A



Figure B



Figure C



Figure D

Half figure A half figure B

Half figure C half figure D

Practice * Which is greater ? :

The pie > The pie

So : half > half

So : $\frac{1}{2}$ > $\frac{1}{2}$



Practice * Which is greater half (a) or half (b) :

* Shape > Shape

So : half the shape > Half the shape

So : $\frac{1}{2}$ Shape > $\frac{1}{2}$ Shape



Practice * Which has less:
half figure (a) or half figure (b) ?:

* Shape < Shape

So : Half the shape < Half the shape

So : $\frac{1}{2}$ Shape < $\frac{1}{2}$ Shape



Practice * Complete using (>, =, <) :

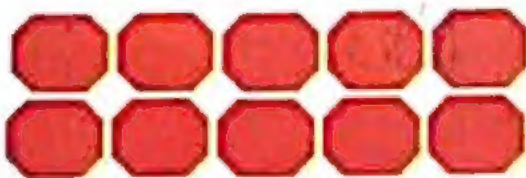


Figure 1



Figure 2

Half the number of figure 1 Half the number of figure 2